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THE...
CANADA LANCET

A MONTHLY JOURNAL OF MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS

EDITED BY
G. P. SYLVESTER, M.D.

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ORIGINAL ARTICLES AND COMMUNICATIONS.

METATARSAL NEURALGIA, OR MORTON'S DISEASE.

This condition is a neuralgia chiefly situated at the anterior part of the foot, especially about the head of the fourth metatarsal bone. In most cases the pain is very acute, but in slighter cases it consists merely in a dull ache.

It was first described in 1876 by Dr. T. G. Morton, under the title of "A Peculiar Painful Affection of the Fourth Metatarso-phalangeal Articulation." Since then it has received notices from many writers, with almost as many titles, one of these being of a more classical origin, "Erythromelalgia," which name, however, is not always wholly correct, as in the majority of cases redness is absent. The neuralgia varies in intensity. The immediate cause is pressure on one or more of the digital nerves at the heads of the metatarsal bones. According to Dr. T. G. Morton, the pain is localized at the interspace between the fourth and fifth metatarsal bones; but in many cases it is present in the second or third interspaces, frequently starting about the head of the third metatarsal bone.

With reference to the causation, there can be no doubt that the rheumatic or gouty diathesis plays an important share in the production of the disease, but its incidence is determined by a blow, strain or fall in which the weight comes mainly on the front part of the foot. In other instances it supervenes after long standing and walking, especially in narrow boots. In many cases some degree of flat-foot is present, but occasionally one finds it associated with the reverse condition, namely, the hollow or claw-foot. Its association with flat-foot is very interesting from an ætiological point of view, since there can be no doubt that with the ordinary condition of flat-foot there is associated a falling of the anterior transverse arch in such a way that pressure is made upon the digital nerves.

SYMPTOMS.—Firstly, the attention is called to the patient's foot on account of the pain suffered; frequently it is intense and paroxysmal, and renders movement impossible—such are the severe cases; nor is it confined to the foot, but starting about the head of the third or fourth metatarsal bones it is reflected up the limb. As a rule, no redness is present. In almost all cases the patient will volunteer the statement that there is nothing gives so much relief to the pain as removing the

boot and holding the instep. This description of the pain is very characteristic.

Secondly, deep tenderness is present about the heads of the third and fourth metatarsal bones. In almost all cases pain may be elicited by firmly holding the head of the fourth metatarsal bone between the finger and thumb. In moderately severe cases it requires somewhat continued pressure to do this, but in bad cases the slightest pressure causes exquisite pain.

Thirdly, the afflicted foot is broader across the heads of the metatarsal bones than is normal.

Fourthly, on examining the sole, a large corn may be seen over the heads of either the second, third, or fourth metatarsal bones, one of which is felt to be prominent in this situation. This prominence of the head of one of the metatarsal bones, taken in conjunction with the character and the starting point of the pain, are diagnostic of the disease.

Fifthly, a peculiar twist of the foot has been observed, the portion in front of the tarso-metatarsal articulation being twisted inwards, so that the base of the fifth metatarsal bone is exposed to the pressure of the boot, and the patient complains of constant pain in that spot.

Sixthly, a tracing of the foot is typical. There is a bulging instead of a re-entering angle behind the ball of the great toe.

PATHOLOGY.—The heads of the first three metatarsal bones are nearly on a line with one another, and are less movable than the remaining ones; the head of the fourth is a quarter-of-an-inch behind that of the third, while that of the fifth is nearly half-an-inch behind the head of the fourth; and between the heads of the fourth and fifth, branches of the external plantar nerve pass. When the transverse arch is compressed, the head of the fifth metatarsal bone (it being very mobile) and its proximal phalanx come directly into contact with the head and neck of the fourth metatarsal, and consequently the nerves are compressed.

This supposed pathology is amply proved by the "X" ray.

While this anatomical explanation suffices in the case of the fourth and fifth metatarsal bones, it does not explain the instances of metatarsalgia beginning between the second and third and third and fourth bones.

The theory of treading upon rather than pinching of the nerve is, in the opinion of many, more in accord with clinical observations; and in support of this theory there are three anatomical facts, namely, the proximity of the painful area to the communicating fourth branch of the internal plantar nerve; the collapse of the anterior arch; and in most cases the fact that the bulk of the body weight in walking on the toes is borne on the first and fourth joints.

DIAGNOSIS.—This must be made from flat-foot chiefly by reason of the pain. As already stated in many cases of Morton's disease, flat-foot of a minor degree is present, but it is rarely so marked as to explain the acute and agonizing pain of metatarsalgia. Cases may be considered to partake more of Morton's disease than of flat-foot when the pain begins about the heads of the metatarsal bones, and is of the paroxysmal nature already alluded to. In some cases not a trace of flat-foot exists, but the arch of the foot is exaggerated, so that in this instance no confusion

ought to arise. Again, in Morton's disease the foot is usually of a healthy color and appearance, whereas in painful flat-foot it is blue and congested.

Prognosis should be guarded in all cases. Exacerbations of the pain may take place. These are due to the accompanying neuritis.

TREATMENT.—In all instances evidences of rheumatism, rheumatoid arthritis, and gout should be sought for and treated with the usual remedies. In all moderate cases the first thing is complete rest to the foot for two or three weeks; then the patient may be allowed to walk, but no boot should be worn for a time, merely a canvas shoe with a bandage round the proximal ends of the metatarsal bones. The boot which should be worn when all pain has subsided must be broad in the tread, so as to give plenty of room for the heads of the metatarsal bones, and should be made so as to fit closely over the instep. In cases of great severity, and in those which refuse to yield to treatment, an operation must be carried out. The best form of operation is undoubtedly the removal of the head of the metatarsal bone around which the pain is greatest. The success of this operation is very great indeed. Some recommend excision of the joint, and others merely neurotomy; but this latter procedure is of little avail.

244 Bloor St. West, Toronto.
August, 1898.

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*PUERPERAL SEPTICÆMIA.

BY H. D. LIVINGSTONE, M.D., ROCKWOOD, ONT.

The question of Puerperal Septicæmia, its cause, site of origin and characteristics have been themes for discussion during many years, and different theories advanced on insufficient data to account for its ætiology.

Earlier investigators on the subject regarded the disease as peculiar to the puerperal state, shrouded it in a veil of mystery, and attributed the causation to a specific bacillus which they were unable to isolate. Pathologists, too, drew their conclusions from post-mortem evidences which today are admitted as fallacious, and only to be viewed as incidents in the course of toxic absorption.

Recent investigation demonstrates the almost universal opinion that puerperal septicæmia is practically identical with the surgical form and its origin entirely independent of pregnancy or the puerperal condition. Reasoning on this hypothesis, we must admit the presence of an initial focus—a starting point for the inception of the poison and its conveyance into the general circulation. For the majority of cases this theory is satisfactory, and, in a large percentage, the cause may be directly traced to some morbid condition of the generative tract, either to a solution of continuity, or to the retention of decomposition products. There are, however, some phases of the disease for which no apparent reason can be assigned, and which sometimes seem to refute the argument that the con-

* A paper read before the Ontario Medical Association, June, 1898.

traction of puerperal septicæmia is impossible unless associated with recent lesions of the parturient system. Perhaps a solution of the difficulty may lie in the fact that the site of absorption has escaped observation, or has occurred in an unexpected quarter. However introduced, the poison rapidly enters the general circulation, and by inducing a toxic condition of the blood gives rise to the constitutional symptoms.

In the treatment of the subjoined cases, it was endeavored to meet this condition by the use of "Aseptolin," formula $C_{11}H_{16}N_2O_2$–OH–C_6H_{31}, a remedy proposed by Dr. Cyrus Edson, of New York, consisting of a solution of phenol and pilocarpin phenyl hydroxide, and said to exert an antiseptic effect on the blood.

Case No. 1 was that of a young primipara, aged about twenty-four, in whom labor was very tedious and necessitated the use of forceps. On the fourth morning after confinement she complained of severe and repeated chills, and later developed considerable pain and tenderness in the left breast, subsequently leading to mastitis. On the afternoon of the same day the temperature rose to 104½°, pulse in the neighborhood of 120; pressure elicited tenderness over the uterus and lower portion of the abdomen, and excruciating pain was complained of on right side of chest. The lungs were carefully examined on this and the preceding visit with negative results, and it was not until the second day following that a marked pleuritic friction, accompanied by pneumonic rates, was heard on right half of chest, quickly followed by a similar involvement of left side —ultimate consolidation was limited to the lower lobe of each lung. The lochia were decreased in quantity, but not particularly offensive. I attribute the cause in the foregoing case to the extremely unsanitary surroundings inducing absorption from recent lacerations of the genital tract.

The treatment adopted was both local and constitutional, the former comprising intra-uterine and vaginal irrigations of a 1-4000 solution perchloride of mercury, at first twice and afterwards once daily together, with as thorough antisepsis of the external genitals as possible. 250 minims of "Aseptolin" were injected into the abdominal wall as an initial dose, and thereafter daily injections of from 75 to 100 minims were employed for over a week. The diet consisted mainly of milk, and in as large quantities as the stomach would tolerate. Stimulants were used freely, whiskey being administered every three hours, the amount guided by the general condition, and in addition small doses of strychnine as an adjuvant measure.

Throughout the attack, which lasted about three weeks and terminated favorably, the temperature ranged between 101° and 103°; the pulse rate, as a rule, not exceeding 120. How much to credit the "Aseptolin" in the preceding instance it is difficult to say. It was not used until the third day after the appearance of symptoms, and the existing complications would mask any prompt effect which might otherwise indicate its remedial action. Considering, however, the gravity of the case, the rapid secondary involvements, and the previously debilitated condition of the patient, I am inclined to think it must have acted beneficially.

The second trial of this remedy was in the case of a primipara, age 37,

married seventeen years. On the evening of the third day after confinement, which was much prolonged, she was attacked by a severe chill. I saw her on the following morning, when the temperature indicated 105, pulse 130. An intra-uterine douche of 1-4000 perchloride of mercury solution was administered, followed by a slight drop in the fever, which again rose nearly to its previous height in the evening. The interior of the uterus was then carefully scraped with a dull curette, nothing abnormal being discovered, and the douching was continued daily for five days. During this period the usual systemic treatment was adopted, but, notwithstanding, the constitutional symptoms remained unabated; the temperature not continuously high but fluctuating between 102° and 103°, pulse rate averaging 120, considerable sweating chills and prostration. On the sixth day two drachms of "Aseptolin" were injected, the thermometer registering 104° at the time, pulse 120. The following day the temperature had fallen to normal, the pulse to 80, and the general condition was markedly improved. Fifty minims "Aseptolin" were again injected, and the patient made an uninterrupted recovery, the pulse and temperature never rising above normal.

I am not advocating "Aseptolin" as a specific in this or any similar disease, or to the exclusion of efficient local measures. My experience of the remedy, although extending to the treatment of a few cases of erysipelas and la-grippe with satisfactory results, has been too limited to permit a decided opinion, but in puerperal septicæmia we are dealing with a disease which, although admitted to be local in origin, is not always so manifested, and then presents itself as a constitutional affection of varying severity, and justifiably indicating the employment of any recognized remedy which would appear to combat the circulation of toxic materials in the system.

A MEDICAL MAN IN THE CABINET.—The sanitary welfare of the people demands a national bureau of public health with a physician as its chief in the President's Cabinet. Sanitation is the salvation of a nation. Health in peace as in war makes enterprise and prosperity possible to a people. Moral degeneracy follows physical, in a people. Hereditary physique and morals go together. Cæsar and Napoleon worked wonders with the world; Napoleon and Cæsar, epileptic, failed, and Napoleon's change of character followed his "epileptic change." Russia's unjust fame as the most tyrannous of nations came from the excesses of the mad filiacide monarch Ivan, The Terrible. A mad English monarch, George the Third, made two peoples out of one, which the coming centuries must tell how much is weal and how much woe for the Anglo-Saxon race.

The evil to nations from neuropathic degeneracy revealed to us in the historic past in the lives of Nero hereditarily tainted with epilepsy and insanity, the acquired degeneracy of Commodus and Heliogabalus warn us in the woe and misery of their subjects against indifference to sanitary states of mind in absolute rules, and teach us the lesson that when the people make the rulers from among themselves they should be first mindful of the health of the people from whom the ruler, the legislator, the judiciary and the army and navy are selected.

MEDICINE.

IN CHARGE OF

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TREATMENT OF ANGINA PECTORIS

Sir Douglass Powell, in a Lumleian lecture recently delivered by him before the Royal College of Physicians, of London, devoted a portion of the essay to a discussion of the treatment of angina pectoris, and this portion of the lecture we produce herewith:

The etiology and morbid mechanism of angina pectoris are difficult enough to formulate with regard to prophylactic and remedial treatment. The difficulties diminish when we recognize that there is a continuity in the phenomena presented to us for treatment from the slighter degrees of introspective recognition of the cardio-vascular mechanism, through the more distinct evidence of cardiac anxiety and distress in connection with the higher and more persistent grades of arterial tension to the paroxysmal attacks of acute breast pang associated with a veritable asthma of the blood-vessels which may supervene in any cases of the series; and this continuity is to be observed between so-called false and true angina, although some authors will not admit the term angina except as applicable to the fatal cases of coronary origin.

In a large proportion of cases angina pectoris is an entirely functional disorder, the main feature of which is sudden increase of blood pressure and a correspondingly sudden call upon cardiac effort; it may be on the systemic, it may be on the pulmonary, side of the circulation that the strain arises. The causes of this arterial spasm are almost all within our scope of remedial treatment, and the neurosis that favors its occurrence is subject to considerable modification and control. In all these cases whilst it is the heart that suffers the angina, the conditions which orignate that suffering are outside the heart. There is no essential difference save in degree, and not always in degree, between cases of angina in which the heart is sound and those in which it is unsound, but there is every difference in the gravity of prognosis and the urgency for treatment. The cause of distress is contraction of the peripheral or general visceral or pulmonary vessels, giving rise to muscular strain of one or both cardiac ventricles suddenly induced and of a cramp-like character.

The cardiac pain in vasomotor angina is difficult to explain satisfactorily; it is distinctly a result of intraventricular pressure, and from its

character and radiation it must be primarily an affection of the sensory nerves of the heart caused by stretching of its tissues, so that the contraction of the tissues is attended with pain. The endocardial surface is more sensitive than the pericardial surface, but comparatively insensitive tissues when stretched become very painful. Dr. Allen Sturge observes that reflected pain is only an ordinary sensation conveyed to a nerve center in commotion, by which it is intensified to a painful sensation. Thus may the reflected pains be accounted for as emanating from the centers disturbed through the cardiac nerves. On the other hand, we have only to conceive a slight degree of hyperæsthesia of the organic nerve centers to account for that undue perception of the cardio-vascular mechanism which is the first grade of neurotic disturbance, and which can readily become a painful perception of increased pressure within the heart.

The pain, which is to a certain extent the measure of the strain upon the heart, is to be attacked by remedies which relax arterial spasm. Amyl nitrite, nitro-glycerine, and the nitrites generally, but especially nitro-glycerine (1 min. of the 1 per cent. solution), may be given at intervals of five minutes for 2, 3, 5 or more doses, and at the same time that the anti-spasmodic is given an appropriate cardiac stimulant is required. In the more purely neurotic cases it is most desirable to avoid alcohol. There is no better stimulant than slowly sipped hot water. Dr. Brunton has pointed out that sipping is a physiological stimulant to the heart, and hot drinks tend to relax arterial spasm. A prescription for a carminative draught, including ammonia, chloric ether, and valerian or cardamoms, is valuable to be taken in several sips. Warmth to the surface, and especially to the extremities, are the further requisites.

The second stage of these cardio-vascular attacks is one of reaction and excitement, to be followed by fatigue. Often by the time the medical observer arrives the cardiac pressure has already been relieved through the depressor nerve of the heart excited by intraventricular pressure bringing about relaxation of arterial spasm; the first violent throbbing or the threatened standstill of the heart has already yielded to quick, perhaps somewhat irregular, beats, the tension of the pulse is no longer apparent, and this fact has no doubt led many observers to question the alleged mechanism of this form of angina. With a few hours' rest in bed the patient may again be fit for the duties of life, although usually a sense of lassitude and fatigue remains for a few days. It is now that the cause of the attacks must be sought out, the conditions of the heart carefully ascertained, and the daily life, diet and surroundings and functions of the patient must be investigated and corrected where in error.

If there be no heart disease present, the patient must be thoroughly re-assured on that point; but if heart lesion be present, much more attention must be given to the after-treatment, and the prognosis depends upon the nature of the lesion present. I would briefly say that the gravest cases are those in which there is enlargement of the heart without, or not accounted for by, valvular defect. I would mention the fibro-fatty heart, the syphilitic heart, the renal heart in this category. Aortic stenosis and aortic regurgitation come next, the regurgitant defect being by far the most common. Mitral stenosis is not infrequently attended with anginal

seizures, sometimes of a fatal kind, and the attacks would probably be more frequent were it not for the readiness with which pulmonary hæmorrhages occur. Mitral regurgitation as the primary disease is rarely accompanied with angina, and when it supervenes on cases due to degenerative hypertrophy and dilatation it tends to preserve the patient from future attacks. On all these cardiac conditions anginal attacks may supervene, having precisely the same mechanism as the attack unattended with cardiac disease. It is most important to bear this in mind, for the treatment is precisely on the same lines, only it must be more urgently pursued.

The initial treatment may be started with nitrite of amyl inhalation, and the patient should always have the drug at hand. But the attack is commonly attended with such acute heart failure that the clinical features of high pressure pulse and laboring heart may be immediately lost. Undoubtedly, the subcutaneous injection of pure ether, to which a minim of nitro-glycerine solution may be added, if not already otherwise taken, is the best treatment in severe cases if caught at the right moment. The sense of prostration is greater and more defined in these cases. Alcoholic stimulants, so much to be avoided in pure vasomotor cases, are in these imperative. A full dose of brandy should be given in some hot drink. In those cases, and they are many, in which flatulent distension forms a marked feature of the attack, if it be not concerned in producing it, a draft of ether, ammonia, soda, cardamoms and spirits of chloroform is of much service at the earliest stage.

The heart is left in an exhausted or fatigued condition after the attack, and there is a decided tendency to a series of several attacks. For this a mixture of strychnine or caffeine may be prescribed with digitalis, so that 15 or 20 minims of liquor strychninæ and 20, or 30, or 40 of tincture of digitalis are given in 24 hours, and the strychnine may be given subcutaneously in, of course, equivalent doses, or the caffeine in the form of salicylate. It is probable that digitalis and strychnine influence the heart muscles before that of the vessels, but if the pulse become tightened, as it may be in exceptional cases, the digitalis must be lessened or its effect on the vessels moderated by the addition of $\frac{1}{2}$ minim or 1 minim doses of nitro-glycerine to the prescription. There is another remedy which is a powerful restorative to the fatigued heart, and that is oxygen inhalation, which may be given for five or ten minutes every hour or two or three hours as may be required.

These cases often come to us with a history of a recent attack, and we have to consider what form of angina it has been, how to avert fresh seizures and how to repair, if it may be, the failing heart which renders each attack so dangerous.

The presence or absence of heart disease must be rigorously ascertained:

1. The soundness or otherwise of valve function.

2. The presence or absence of enlargement, dilatation, or hypertrophy of the organ.

It is important not to form too hasty a judgment, and it is often impossible to come to a final diagnosis at or immediately after a seizure. In tumultuous action, whether from excitement or violent work, the loco-

motion of the heart is greatly increased, and an inexperienced observer is apt to find great enlargement, displaced apex beat, etc., when none exists. On the other hand, one hears it sometimes maintained at inquests and the like that considerable organic disease of the heart may exist without any recognizable signs. I would venture to say that a careful investigation of the sounds and dimensions of the heart will always establish in such cases a displaced apex beat, an increase in the dimensions, or a recognizable alteration in the sounds of the heart. The converse is, however, frequently true, namely, that much alteration in the heart is conceived to be present when none exists. It requires great precision and diagnostic courage to prove a negative, and in the presence of functional disturbance and discomfort and anæmic *brutis*, mistakes in diagnosis are very frequent and easily made.

With mitral regurgitation of rheumatic origin, high tension pulses do not often supervene, but mitral insufficiency is frequently a sequel to the dilatation of the heart consequent upon chronic high tension and secondary cardio-vascular changes, and under these circumstances it is undoubtedly a safeguard against over-distension of the ventricle. I have seen cases in which the establishment of mitral incompetence has produced a cessation of anginal attacks which had previously occurred from time to time. In senile hearts mitral regurgitation is common, and is not to be looked upon seriously, but rather as a favorable element in prognosis, a condition normal to the senile heart.

SUMMER DIARRHŒA.

BY WILLIAM LELAND STOWELL, M.D.,

Visiting Physician to Infants' and Randall's Island Hospitals, Demilt Dispensary, etc.

Solomon said: "To everything there is a season, and a time to every purpose under the sun: a time to heal and a time to speak," etc. This is the beginning of the diarrhœa season, and the fitting time to speak of successful healing treatment.

Summer diarrhœa, or gastro-intestinal catarrh, or mycotic diarrhœa, may be due to any one of about forty bacteria which have been isolated. If a given germ always produced a certain set of symptoms, and we could recognize them, our treatment might not be quite so empirical as now. We don't know what the conditions are in which the germs flourish except in a few instances. The results we do know. The gastric juice is a powerful germicide, and abundantly able to destroy the invading army of germs, unless they are in overwhelming numbers, or the digestive fluid is very scanty. Owing to excessive summer heat or sudden change to cold, or nervous perturbations, this physiological anti-septic may be enfeebled. The same physiological conditions may interfere with the formation and elimination of bile, the intestinal anti-septic and fat emulsifier.

The cause of trouble may be a food proper in itself, but given in too great quantity or too often, as milk that has commenced to ferment, or fruit that is beginning to decay.

If there is much gastric disturbance in a child, the intestine is similarly affected, probably later the colon. Gastro-intestinal catarrh is therefore one disease, not two. The symptoms are restlessness, pain, vomiting of stomach contents with mucus, and frequent stools containing the same. If the offending cause is still in the digestive tract, sweep it and its products out with a dose of castor oil. In a child more than a year old add tinctura opii camphorata or tincture of opium. Next change the diet for twenty-four or forty-eighty hours, if not longer, no matter how well it agreed before.

To a baby give egg albumin and sweetened water, or beef juice, not beef tea. Another of my favorites is wine whey, made by adding a glass of sherry to half a pint of hot milk. The sweetened whey may be taken cold without limit. It is refreshing, nutritious, and slightly stimulating. If desired, the whey can be prepared with essence of pepsin. In fact, the peptonoids given with water are very helpful. In the hospital (Infants' Hospital, Randall's Island) this is a routine treatment at times. Mutton broth should be mentioned too.

Often the stools are very green, and the accompanying mucus also. This shows that the bilirubinhas been changed to biliverdin, from what cause is disputed. We know, however, that the best treatment is mercury with an alkali. Give ten grains of hydrarg. cum creta at one dose, or a tenth of a grain of calomel, and half a grain of bicarbonate of sodium every half hour for ten doses. The calomel may increase the greenness of the stools for a time, but they will become less frequent and return to normal color soon.

If mucus is very abundant, and surrounds small flocculent masses or curds, the chief trouble is in the colon. If there are streaks of blood also, the rectum is involved—a colitis and proctitis. Babies with this form of diarrhœa have griping and tenesmus, with occasional prolapse of the rectum. It is my habit to have all such hospital cases given frequent intestinal irrigations of warm salt solution, one drachm to the pint. There is nothing better than the salt, though it may seem more elegant to use one of the numerous germicide and anti-septic preparations, of which there are so many.

In cholera infantum the copious saline injections not only lessen the frequency of stools, but, being readily absorbed, help to replace the great loss of fluid. The collapse is overcome, and the weak, fluttering pulse becomes stronger.

If it becomes necessary to keep the young infant off from milk for a considerable time, we must choose carefully from the numerous infant foods. Malted milk and Mellin's food are easily tolerated in an enfeebled digestive tract. It must be remembered that these two foods are almost devoid of fat, and if they are to be used long cream must be added.

The manufacturers of food products seem to be giving more attention to the subject of nutrition than the majority of physicians do. Nearly all of these foods have virtues which appear in their advertisements, and all have deficiencies which are not so apparent. Babies need fats, proteids, and carbohydrates just as adults do, but in varying proportions.

The infant needs to get his heat chiefly from soluble carbohydrates—

i.e., sugar—not insoluble starch, which he must first convert into a sugar. The fuel of a baby should come to him ready for use, as sugar, for he is not able to split his own kindling—*i.e.*, starch—until six or eight months of age.

If a child a year or more old, who could digest some starch, fails to do so temporarily, he may have one of the malt preparations after his meal of bread, cracker, or baked potato. In the same circumstances we may use a proprietary food, even though it does contain unconverted starch. The addition of maltzyme or other malts will quickly make the change. Hudson's whole-meal food and Carnick's soluble food I find the best. The babies like them, and the offensive stools come back to normal characteristics under such feeding.

Milk is after all the only ideal food, and all these others are makeshifts for temporary use. Milk must be the main reliance if we would avoid rickets, scurvy, and faulty development in general.

Very rich mother's milk contains four per cent. of fat, seven per cent. of sugar, and two per cent. of proteid or casein. Remember that cow's milk has the same fat, with less sugar, but with twice the quantity of casein. Gravity cream contains sixteen per cent. of fat, which can be readily brought to four per cent. by dilution with three parts of sugar water. The sugar water consists of two ounces of either milk sugar or cane sugar to a pint of water. This is an approximation to mother's milk which any one can easily prepare. It is wise sometimes to replace one part of sugar water by one of lime water. More accurate percentage modification may be worked out by the methods of Colt, Baner, Rotch or Holt.

Finally, as to a few drugs. They will be needed, as the food ideal in theory is not always so in practice.

For a simple diarrhœa in a baby give bismuth with equal parts of chalk mixture and mucilage of gum arabic

To older children a little opiate is not harmful—*e.g.*, chalk mixture, mucilage of gum arabic, aromatic syrup of rhubarb, and paregoric, of each, half an ounce. Give a teaspoonful after every stool.

When fermentation is marked, give salol and bismuth. Resorcin and naphthaline are often efficient, but I find myself using salol all the time. Creosote is another good remedy, and subgallate of bismuth also, each easily administered in combination with liquid peptonoids, to check diarrhœa and to stop vomiting.

The best results are obtained by giving to the digestive tract complete rest, next change of food, then irrigation.—*N. Y. Med. Jour.*

USE OF THE STOMACH-TUBE.

Dr. A. L. Bennett, of Buffalo, concludes a paper on this subject in a style which has become popular on account of its terseness:

1. Don't use the stomach-tube simply because you want to be considered scientific and "up-to-date."

2. Don't withdraw stomach contents for examination unless you are prepared to examine them.

3. Don't discard external means of physical diagnosis because you have a stomach-tube.

4. Don't expect too much from diaphanes, electric buzzers, buckets, complicated tubes, etc. All these have their uses, but in general they are available in very rare cases.

5. Don't pass the tube without first inspecting the mouth and throat and examining the heart and arteries, and at least inquiring as to pregnancy, piles, and other possible contraindications.

6. Don't pass the tube as a means of treatment unless you know precisely what you want to accomplish with it.

7. Don't introduce a weight and bulk of water which you would consider injurious if swallowed. As a rule, don't introduce more than a pint at once, and almost never more than a quart. Don't be deceived by the ball-valve action of a particle of food or any other cause which may allow water to remain in the stomach. Make sure that you withdraw as much as you introduce, except that you may allow a little for leakage through the pylorus, or possibly absorption. Remember that the more a stomach can hold the less it ought to.

8. Don't imagine that the gastric douche will cure all of the diseases of the stomach; you would laugh at a gynecologist who held such a view about the vaginal douche.

9. Don't imagine that a stomach is doing well till it can digest plain but varied diet without mechanical interference. Don't speak of a case as cured till a patient can indulge in all the ordinary food without medical aid and without injury.

10. Don't let the patient learn to pass the tube himself. This rule holds for his benefit as well as yours.

11. Don't fail to use the tube or to have it used when the indications out-weigh the contraindications.—*Am. Med. Surg. Bulletin.*

TREATMENT OF HEMOPTYSIS.

In severe cases of phthisical hemorrhage of all kinds, ergot is perhaps the most reliable drug, administered in full dose initially of the fluid extract (2 to 3 fl. dr.), and afterwards in smaller dose of 20 to 30 minims every hour for a few doses, or hypodermically in full dose, 15 minims of a solution of four to five grains of ergotine. The hypodermic injection is the more potent agent: it should be made deeply into the muscles. The subsequent action may be maintained either by injections or by doses of the fluid extract, 20 minims every half-hour for a few doses.

Digitalis is indicated in the same class of cases as that which calls for the use of ergot, but in general it developes its effects slowly. If employed as a means of controlling a sudden large hemorrhage it should be given hypodermically, 20 to 30 minims of the tincture; the dose to be repeated in half-an-hour if need be.

Tincture of hamamelis is useful in hemoptysis, and may succeed when other remedies fail. It is indicated in case of small but persistent blood-spitting, in 10 to 20 minim doses every four or six hours. In employing

gallic or tannic acids the remedy must be repeated frequently, and the initial dose be maximal, *e.g.*, of gallic or tannic acid, 20 or 30 grn., in one ounce of water, at once, and subsequently a teaspoonful of such solution every twenty minutes.

The application of firm ligatures around the thighs and the upper arms appears in some cases to have been effective; the *modus operandi* is perhaps by starving the pulmonary circulation by the arrest of the blood returning from the limbs. If this be the explanation, this method will secure a lower blood-pressure.

The treatment by calcium chloride, which is based on physiological findings, seeks neither to close the rent in the vessels nor to reduce the blood-pressure, but to heighten the coagubility of the blood generally, and so to favor thrombosis at the bleeding points. The salt must be given in full doses of from 15 to 45 grn. every four to six hours, or in great emergencies from 20 to 30 grn. as an initial dose, and then from 4 to 5 grn. every quarter of an hour for a few doses, subsequently as above. Investigations seem to indicate that the coagubility of the blood increases during the administration of calcium chloride up to a certain point, and then declines and may fall even below the normal. For three or four days the coagubility increases, and therefore, during a period not exceeding this, the drug may be given, dissolved in either water or milk, or with the addition of some extract of licorice.—*Dr. H. Painsbury, in Treatment.*

AN ASSOCIATION FOR THE PREVENTION OF CONSUMPTION AND OTHER FORMS OF TUBERCULOSIS.

We desire to call attention to this Association, which has been formed with the object of preventing the spread of the most fatal disease to which mankind is subject. It has gradually become definitely known that tuberculous disease, of which pulmonary consumption or phthisis is an example, is not inherent in the constitution, but is communicated indirectly from pre-existing cases, and the principal methods by which it is spread have been identified. Tuberculous disease, which in one or other of its forms is responsible for at least 1 in 10 of the deaths from all causes, and, according to some calculations, for 1 in 6 of the deaths among adults, is therefore preventable.

For this the education of the public is needed in the methods of prevention and eradication, and the stimulation of individual effort in carrying them out. The objects of the Association are the dissemination of information, the arousing of public feeling as to the necessity for defensive measures, and the provision of sanatoria, which will be both preventive and curative, for the open-air treatment of consumption. In order to enlist the co-operation of large numbers the annual subscription for membership has been fixed at 5s., and the donation for life membership at £5 5s. All members will receive a full description of the measures which are proposed, and information as to the organization of the Association. The office of the Association is at 20 Hanover Square, W., where members can now be at once enrolled.

We are permitted to state that the Prince of Wales takes a deep interest in the movement.

(Signed) SAMUEL WILKES, President of the Royal College of Physicians, London.
WILLIAM MAC CORMACK, President of the Royal College of Surgeons.
W. H. BROADBENT, M.D., F.R.S., Chairman of the Provisional Committee.
MALCOLM MORRIS, Hon. Treasurer.

All communications respecting the Association should be addressed to St. Clair Thomson, M.D., Hon. Secretary.

STROPHANTHUS *vs.* DIGITALIS.—Dr. Reynold W. Wilcox, of New York, contends that the advantages of approved preparations of strophanthus over digitalis are: (1) greater rapidity of action; (2) absence of so-called cumulative effects; (3) non-interference with the caliber of the arteries. He lays stress on the marked safety of strophanthus as a heart tonic for the aged, the nephritic, the gouty, and the atheromatous. It is the best cardiac remedy for children.

USE OF THE POULTICE.—Dr. J. M. Carter, in November number of *Medicine*, makes a plea for the more rational use of the poultice. In my opinion, the objection to their use because they grow cold and thus may become the exciting cause of disease, is puerile. If not properly used it would be valueless and might be harmful, but, under similar application, so would be the use of quinine or any other valuable remedy.

The poultice is of great benefit in relieving pain and dissipate congestion by causing local dilation of the capillaries. Now, if these are the objects I sought when it is properly used, it becomes of value in the chest applications of children especially. It should not be used, however, in those cases when, because of poverty, coldness of the room or want of careful nursing, the definite directions of the physician cannot be carried out. It must be borne in mind that it is not a panacea for all the chest diseases.

Dr. Charles E. Page, in the *Medical Times* of November, 1897, has given an interesting article upon the treatment of rheumatism and the acute fevers. He protests strongly against the present methods adopted by the profession at large—not only in the matter of medication, but in that of feeding. He produces strong arguments and cites cases and authorities to prove that in rheumatism, fasting and not feeding is what nature cries out for—that the stomach is unable to digest the food, and that the pathological condition is being continued and aggravated by the conscientious but ignorant efforts of the medical attendant; he advises the withholding of all food for a time; the exhibition of water in large quantities, two or three quarts in the twenty-four hours, frequent baths and placing of the joints in cold packs. He objects to rectal feeding in these cases in the following words: "Some degree of putrescence of the nutritive material injected into the lower bowel, a process altogether unnatural, of course, adds still further to the patient's toxic state."

SURGERY.

IN CHARGE OF

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PERIRECTAL ABSCESS.

BY A. B. COOKE, A.M., M.D.

The designation, perirectal abscess, is not the one ordinarily applied to this complaint. Under the names "circumscribed periproctitis," * "periproctitis (ischio-rectal abscess),"† and "rectal abscess,"‡ different authors have written of it, while one prominent authority § only accords it incidental mention in his chapter on "Fistula in Ano." The term employed in the title seems to me more accurate, both as to the nature of the trouble and the pathology involved, and at the same time sufficiently comprehensive to include the various forms under which it is met.

While a more attractive and perhaps more interesting subject might have been chosen for this occasion, from the standpoint of practical importance I know none more worthy of earnest consideration. When we stop to think that abscess is the invariable precursor and cause of fistula, that the latter, as a rule, is a preventable sequence, and then run over each for himself the cases of fistula which have fallen under his own observation, no argument is needed to justify my selection.

Two years ago, at the Pulaski meeting of this Association, I had the honor to present a paper on "The Operative Treatment of Rectal Fistula." This should have had precedence. For I unreservedly claim, in the light of my own experience and with the weight of authority to sustain me, that were the initial abscesses properly treated fistulæ would be notable chiefly for their rarity.

Of my last twenty-five rectal cases, taken consecutively from my case-book, eight were fistulæ and three abscesses. Expressed in other words, thirty-two per cent. were cases of fistula, twelve per cent. of abscess. Or, basing the calculation on the recognized fact that fistula invariably originates in abscess, the latter disease was represented in forty-four per cent. of twenty-five consecutive cases. This proportion is probably somewhat in excess of the true average, but it is nearly enough accurate to be strikingly suggestive. And from it we may deduce at least two pertinent and significant conclusions: First, perirectal abscess is a very frequent dis-

* Ball. † Gant. ‡ Cripps. § Mathews.

ease; second, the frequency with which these cases result in the formation of fistula under the usual methods of treatment and the fact that in the large majority of cases such result is altogether preventable, commend the subject to the serious attention of every physician who has at heart the interests of his patients and the high purpose of his calling.

The rectum is surrounded by and imbedded in loose cellular or areolar connective tissue, the structure most favorable to the suppurative process. Abscess in this region occurs in three situations, two beneath the levator ani muscle, called respectively superficial or marginal and ischio-rectal, and one above that muscle in the so-called "superior pelvi-rectal space" of Richet. We shall consider them in the order named. But before taking them up separately it were well to consider briefly a general question pertaining alike to all. Whether or not pyogenic bacteria are essential in every case to pus formation, our friends of the microscope have not yet fully determined. In this locality, however, they are invariably present. And this is not a cause for wonder when we remember the peculiar function of the rectum and the fact that an abrasion, however slight, furnishes a means of ready egress to any evil-disposed cocci which may be lurking in the vicinity. The etiology of the large class of so-called idiopathic abscesses occurring in this region is doubtless traceable to this source, and viewed from this standpoint the only wonder is that they are not of even more frequent occurrence.

The location and nature of superficial or marginal abscess is sufficiently indicated by its name. More correctly speaking, it should be called perianal abscess. A large proportion, perhaps the majority, of these cases result from inflamed external piles. Particularly is this true of the thrombotic variety, in which the clot acts as a foreign body and is itself liable to degenerative changes. Other causes are infection through anal fissures, irritating discharges from above and in the female from the vagina, the use of rough detergents, etc. They may occur at any point of the anal circumference.

As might be supposed from its location, the chief symptom of perianal abscess is pain, often excessive in character. Constitutional disturbance occasionally, though rarely, takes place. Aside from the pain, this form of abscess is of comparative insignificance; but if allowed to pursue its own course marginal fistula is the certain result. Such result follows more frequently in this than in the other varieties for the reason that, though painful, the patient generally regards his trouble merely as an "attack of piles" and postpones seeking medical advice until the damage has been done. If seen in the initial stage remedies looking to the resolution of the inflammation may be employed with some hope of success. Of these, crushed ice applied locally and a brisk saline purge constitute the best. When suppuration ensues the indications are fulfilled by immediate incision, cleanliness and the usual applications. There is no place here nor in any other form of abscess for the use of that surgical abomination, the poultice.

Ischio-rectal abscess is the most frequent form of this affection and far more serious than the one just considered. The ischio-rectal fossa, from which it takes its name, is a pyramidal-shaped space lying upon each side

of the bowel, bounded below by the integument, above by the under surface of the levator ani muscle, upon the inner side by the rectum, and upon the outer side by the tuberosity of the ischium and contiguous portion of the internal surface of the pelvic wall. It is filled in the natural state by connective tissue and fat. The causes of abscess in this situation are various. Infection through a breach in the mucous membrane probably heads the list. This is effected in many ways by the lodgement of foreign bodies above the sphincter muscles, injury from the syringe nozzle, the injection treatment of internal hemorrhoids, etc. Other causes are traumatism from without, sitting on cold seats, ulceration and perforation due to stricture, acute phlebitis, and depraved states of the general health.

Pus developing within the boundaries named tends in the direction of least resistance, and, if left to itself, as a rule breaks sooner or later upon both the mucous and cutaneous surfaces, forming a complete fistula. It may, however, break at only one point, resulting in a blind internal or blind external fistula, as the case may be. The former is the more usual for the reason that the rectal wall offers weaker resistance, though in such cases a cutaneous opening is almost certain to form later because of imperfect drainage and the entrance of contaminating matter from the bowel. In the large majority of instances the mucous opening will be found in the sulcus between the two sphincter muscles, the insertion of the levat or ani preventing the pus from making its way further upward. The cutaneous opening may occur at any point in the ano-perineal region Though usually pointing over the ischiorectal fossa, the pus may burrow forward to the perineum or backward between the rectum and coccyx, making its appearance in the fossa or at any point upon the opposite side. In the latter event horseshoe fistula would result.

The symptoms of ischio-rectal abscess are, in the beginning, a dull throbbing pain in the region of the rectum which constantly increases in severity. Constitutional symptoms soon supervene, occasionally being ushered in by a chill followed by fever, furred tongue, headache and general malaise. The overlying skin becomes red, indurated and œdematous. In neglected cases the brawny induration sometimes involves an entire buttock and presents a very characteristic appearance. It sometimes happens that the inflammatory process assumes the nature of an acute cellulitis and spreads with great rapidity. These are cases of exceeding gravity as regards the life of the patient as well as the local result. When the pus makes its way forward into the perineum retention of urine from pressure may occur.

The prognosis in ischio-rectal abscess depends almost absolutely upon the plan of treatment adopted. If poulticed and allowed to take its own course, fistula is the practically inevitable result, to say nothing of the days of suffering such a course necessarily entails. And, be it said to the shame of our profession, this is the course habitually pursued, with the result that fistula, a preventable malady, is perhaps the most common of all rectal affections.

As a rule it is vain to hope for resolution in these cases, and the time spent in palliative treatment is worse than wasted. Early and free in-

cision constitutes the only rational treatment. It is neither necessary nor advisable to wait for the physical signs of pus. This is usually present long before it can be accurately located. For the sake of thoroughness the operation is best done under general anæsthesia, though I have used cocaine with considerable satisfaction in a few cases. The character of the incision is a matter of some moment. The bistoury should be passed directly inward until pus oozes out beside the blade. As the knife is withdrawn the parts should be freely incised *in a direction perpendicular to the transverse axis of the bowel.* In other words, the cut should be across the radiating anal folds, not between them, as in the latter event the normal contracted condition of the parts would tend to close it and impede drainage. The finger or curette should be introduced into the wound and all loculi broken down and the debris removed. The cavity should then be irrigated with hot bichloride solution (one to one thousand), and lightly packed with iodoform gauze. The dressings should be removed as soon as soiled, and thereafter renewed daily. For all irrigations after the first I habitually use a solution of permanganate of potash (one to two or three thousand) which in my hands has seemed to hasten granulation more rapidly than any agent of that class. In the later stages of protracted cases, or where, for any reason, healing is retarded, stimulation of the wound becomes necessary. For this purpose balsam of Peru or a weak solution of nitrate of silver answers well. But better than these is protonuclein specially applied on gauze or by means of an insufflator. This agent has a remarkable power of stimulating indolent granulations, and the effect of even a few applications is sometimes truly astonishing. When practicable it is advisable to keep the patient in the recumbent position until the healing process is well established.

Unless the rectal wall is already penetrated or hopelessly encroached upon, this plan of treatment, faithfully carried out, will rarely prove disappointing. I have never failed in a single instance to prevent the formation of fistula.

A common difficulty which the surgeon has to contend with in these cases consists in the fact that evacuation of the pus is followed by such great and immediate relief that a false sense of security resulting in carelessness is engendered. For that reason the nature of the trouble should be fully explained to the patient, the inevitable consequences of neglect pointed out, and all responsibility for failure to follow the advice offered thrown upon the party most concerned.

Strange as it may appear, the idea has prevailed and is yet prevalent to greater or less extent in the profession that abscess and fistula are one and the same disease. And the advice is not infrequently given patients to apply a poultice and wait till the acute symptoms subside, then have the fistula "cut out." Of course this is a ridiculous error, and of course no member of this Association would ever be guilty of falling into it.

Abscess of the superior pelvi-rectal space is a far more serious, but, happily, a much rarer disease than either of the two considered. This space lies above the levator ani muscle and was first described and named by M. Richet. It is the interval between the pelvic fascia which overlies that muscle, the peritoneum, rectum and pelvic wall. It is filled in the

natural state with loose cellular tissue sometimes containing fat in its meshes, and communicates by direct continuity with similar tissue in the iliac fossæ, lower abdomen, and pelvis. It also communicates with the gluteal region through the sciatic notch, and in the female is continuous with like tissue in the broad ligaments. It is easily understood from this description how abscess in this space may assume such extensive proportions. Pus once formed may burrow in almost any direction, reaching practically any part of the pelvis and lower abdomen, perforating the rectum or bladder at any point, and making its appearance in the lumbar or inguinal region or escaping into the thigh through the femoral, sciatic or obturator openings.

The causes assigned for this form of perirectal abscess include those mentioned in connection with the ischio-rectal variety, and certain others. Among the latter are parturition, sepsis, acute diseases of the genito-urinary organs, traumatism inflicted by means of the rectal bougie, necrosis of bone, etc. The symptoms in these cases are often very obscure. There may be some pain or ill-defined uneasiness in the pelvis. This is seldom severe and may or may not be increased by defecation. Fever ushered in by a chill may be slight, or, on the other hand, so severe as to rapidly exhaust the patient's vitality. More or less disturbance of the urinary function is apt to occur from pressure upon the bladder and deep urethra, manifesting itself in great vesical irritability, with incontinence, or in retention.

The diagnosis of pelvi-rectal abscess is very difficult to make. The subjective symptoms cannot be relied on, and until the pus points or the tumor appears there are no physical signs to serve as guides. And even when most pronounced the physical signs may result only in confusion and error. Instances are recorded in which pericecal abscess and hip joint disease were so closely simulated as to utterly mislead the surgeon. In the female the same possibility is conceivable with reference to suppurative disease of the adnexa. Should the pus discharge into the rectum or bladder the diagnosis would be greatly facilitated. Careful digital examination of the rectum will occasionally clear up the most obscure case.

The prognosis is always and necessarily extremely grave. Twenty per cent. of the recorded cases have terminated fatally, generally by rupture of the abscess into the peritoneal cavity. Should this not occur the patient would still be exposed to all the dangers of pyæmia and a prolonged and exhausting suppurative process. In the comparatively small proportion of cases which tend to spontaneous healing there remains to be encountered the dangers of vicious cicatrization. From this cause either obstruction, or, if the anus is involved, incontinence of feces may result, neither of which conditions can be lightly reckoned in determining the question of prognosis. But even in this class of cases healing is rarely complete, a permanent fistulous tract usually remaining. Such a tract may open into the rectum, bladder or urethra, or upon the surface of the body in any of the various situations above alluded to. The depth and extent of these fistulæ in the large majority of cases render them inoperable.

No definite rules can be laid down for the treatment of this variety of perirectal abscess. If the pus can be located its evacuation is the first indication. As a general rule this should be accomplished by incision over the most prominent part of the tumor. In some cases the pus is best reached through the rectum, in others abdominal section offers the easiest and most effective route. But by whatever means and from whatever point attached, the only principles of treatment to be relied on may be expressed in two words, viz., incision and drainage.

A special kind of perirectal abscess which deserves a word of separate notice is that of tubercular origin. This is not infrequently met with in this region, conforming in point of location to either of the three ordinary varieties. Localized tuberculosis here, as elsewhere, is generally chronic in its nature, and the symptoms of tubercular abscess in this region are by no means so pronounced as in the usual forms. But the item calling for special mention in this connection pertains to the treatment. After evacuation of the pus free use of the curette or cautery is indicated and active stimulation of the wound is usually demanded from the beginning.

The correct diagnosis of tubercular abscess is a matter of paramount importance to the welfare of the patient, and where the trouble is even suspected to be of such character the evidence of the microscope should invariably be sought.

In conclusion, Mr. President, I desire again to emphasize the fact that rectal fistula is a preventable disease and that the method by which its prevention is to be accomplished consists in judicious treatment of the initial abscess. The method which, in my hands, has proven successful to that end I have endeavored to set forth clearly and concisely. It involves no intricacies either of technique or of remedial agencies—merely painstaking observance of those principles which render similar troubles in other localities among the most satisfactory to treat of all surgical affections.

The aim and purpose of modern medicine have undergone great advancement in recent years. Now the prevention of disease engages our thought and effort equally with its cure. And the physician who aspires to accomplish the worthiest and best must appropriate this truth and apply it without discrimination in his work.

SURGERY OF PANCREATIC CYSTS.

Lauwers of Courtrai (*Revue de Gynéc. et de Chir. Abdom.*, November and December, 1897) operated in June, 1897, on a woman aged 44. She had been in good health till the preceding April, when she suffered from dull, continuous and increasing epigastric pain. In May, Lauwers detected a large oval tumor distending the abdomen. It fluctuated and could be moved laterally. It filled the epigastrium and part of the hypochrondria, came downwards a little below the umbilicus and inclined more to the left than to the right. Stomach resonance was heard over the upper part of its anterior aspect. For this reason aspiration was not

undertaken. The urine was free from sugar and albumen. On opening the abdomen the stomach was found stretched over its anterior surface, the lower segment being transversely bisected by the colon; but the cyst extended at the same time so far upwards as to pass well above the lesser curvature of the stomach. This upper part was chosen for puncture, and about five pints of a transparent, yellowish, greasy fluid, containing shreds of fibrin were removed. Lauwers explored the cyst from the inside. He could feel the vertebral column through the posterior walls, but could not actually define the pancreas, and no calculi were detected. The wall of the cyst was so closely fused with the posterior aspect of the stomach that the operator did not attempt enucleation. The edges of the incision in the cyst were sewn to the peritoneal layer of the abdominal incision at its lower angle, and the cavity of the cyst packed with iodoform gauze. For a week there was such free discharge from the cyst that the dressings had to be changed every day, and at the end of the week a drainage tube was substituted for the gauze. During the third week, as the discharge threatened to continue indefinitely, Lauwers injected 10g. of pure tincture of iodine. This caused great pain, relieved by morphine. The discharge rapidly diminished; 5g. of the tincture were injected a week later. Six weeks after the operation the secretion had ceased, and the fistula completely closed. In October the patient was in perfect health, free from abdominal pain, and digestion was easy. The abdomen was flat. The fluid from the cyst was examined twice, but, as has happened in other cases of undoubted pancreatic cyst, no sugar, bile nor amylolytic material was detected on analysis.

DISLOCATION OF CERVICAL VERTEBRÆ.

James P., colored, male, age 23 years, laborer, admitted to Nashville City Hospital on March 30, 1898. Fell from a derrick, striking the ground upon left shoulder and side of neck, a beam from the derrick falling across him. Upon examination he was found to have both motor and sensory paralysis from his neck down; experienced great pain in cervical region; the spinous processes of the sixth and seventh cervical vertebræ were very prominent; above the sixth there was a marked depression. The patient complained of "having a lump in his throat." The dislocation was reduced by extension, counter extension and manipulation. Extension was applied by a bandage around the head and a cord attached to the bandage. This cord ran over a pulley at the head of the bed with a weight attached to its free extremity. Counter extension was accomplished by elevating the head of the bed and having also a pulley and weight applied to the lower extremity. This apparatus was applied constantly for about ten days, during which time patient suffered great pain, controlled only by large doses of morphia. A laxative was required to cause movement of bowels, but there was no control over the actions. Kidneys acted very well, but urine was voided involuntarily. Physical condition of patient has remained good, very little flesh lost, face is full, and the patient says were it not for paralyzed condition that he would

feel as well as ever. At the time of the accident a portion of skin over the lower lumbar region was rubbed off at this point. A very bad bed sore developed, but with proper treatment it has now almost healed. Sensation in the paralytic areas to return in two days after admittance, and at the end of two weeks was normal. The motor paralysis remained unchanged for three weeks, but at this time motion began to exhibit itself, first in great toe, then in lesser toes, and has gradually gone upward, and now he can move lower extremities slightly. The pain in the neck has disappeared and patient rests well without any opiate at all.

The medical treatment in this case was at first increasing doses of iodide of potassium. This was continued for about four weeks, when large doses of strychnia were given and electrical stimulation applied principally along spinal column. This treatment is now applied daily and patient improving.—*Med. and Surg. Bulletin.*

CARE OF PATIENTS AFTER THE OPERATION FOR APPENDICITIS.—J. M. Barton, M.D., *Philadelphia Polyclinic*, separates the cases into four groups, (1) where the abscess is opened without entering the peritoneal cavity; (2) where an operation is performed between attacks and no pus is present; (3) where the general peritoneal cavity is opened and the abscess emptied; (4) where general septic peritonitis exists at the time of operation. In all operations for appendicitis there is but little danger from shock, and none from hemorrhage after the operation is finished. If there is any shock it will readily yield to heat and strychnia. Death is caused by general septic peritonitis. There is some difference in treatment of each class, but speaking generally (not saying anything of the last group) the treatment consists in perfect rest in bed, no food at all for twenty-four hours, and but a limited amount of water. By the third day he can have ordinary diet in moderate amounts, such as soft boiled eggs, stewed chicken or mutton, milk and dried toast, etc. The soiled dressings should be removed once or twice daily, but syringing out of the cavity is not advisable. The stitches may be removed from the seventh to the ninth day; at this time the drainage tube (if one has been used) may be shortened and taken out the fifteenth day. There is no hurry about the bowels being opened, and under no circumstances is it advisable to purge for several days. To prevent hernia the wound should be strongly supported from the first by a rubber plaster fitted with tapes, and continued for months.

TAXIS IN STRANGULATED HERNIA.—The following method of performing taxis in cases of strangulated hernia is offered by Dr. William B. DeGarmo, who claims for it a very large proposition of successful reductions. His large experience with this class of cases should give such a recommendation great weight. The instructions are to take hold of the tumor and draw it down, in this way lengthening the part in the canal at the point of constriction. Then, without attempting to push it up, steady pressure is to be made on the tumor with the idea of forcing out its contents. If the patient is a child, it is also well to suspend the little one by one leg while taxis is being made.—*Atlanta Medical and Surgical Journal.*

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF
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RECURRENT MULTIPLE NEURITIS OF SPECIFIC ORIGIN.

BY PROFESSOR B. SACHS, M.D.

Let me refer in this connection to another rare affection, giving you the history of a patient whom I have had an opportunity of observing for some years, and whose condition has always been of special interest to me, because he exhibited a form of palsy not commonly met with after specific infection. Syphilitic multiple neuritis is so rare that Oppenheimer merely concedes that it may occur. Dana does not mention syphilis as one of the possible causes, and in an article published some years ago on the "Syphilitic Affections of the Nervous System," I was able to report upon cases of specific neuralgia, but could not give a satisfactory account of cases of syphilitic multiple neuritis. The history of the patient is briefly as follows:

Mr. F. J. L., temperate, and moderate in all habits, was seen by me in consultation, Nov. 12, 1895. He was thirty-five years of age, and had been married two years. Three years previous to the examination he had acquired a specific sore, was treated for it by one of our ablest dermatologists, and was allowed to marry at the end of one year. For six months previous to his first visit to me he had been subjected to a great deal of excitement; but with that exception everything had been going on well. In order that he might have a short vacation he went to Europe Oct. 1, 1895, and was gone only four weeks. While in Paris he noted that he had considerable difficulty in dragging himself up and down stairs, and even walking on level ground. There was a peculiar tingling sensation in both legs, and they often felt as though they were going to sleep. After his return from Europe, on Nov. 1st, the legs grew weaker and weaker, until he was but barely able to stand on them, and to walk about with the assistance of a stick. During this time he also experienced special difficulty in raising himself from the bed. When once on the feet was able to move about with the assistance aforesaid. He had never experienced the slightest trouble in controlling the vesical and rectal functions.

At the time of my first examination I noted very marked paresis of both lower extremities. Considerable atrophy of the anterior thigh muscles, weakness of these and of the lower spinal muscles. Below the

knees the muscles seemed to be less affected, yet there was distinct atrophy of both anterior tibial groups. The anterior thigh muscles did not respond to the faradic current, and there was a diminished galvanic response, but the formula was not altered. The knee jerks were wholly absent. There was no evidence of spasticity. This peculiar association of symptoms suggested the possibility either of a mild form of anterior poliomyelitis, or of a multiple neuritis. If we bear in mind the fact that there was no pain along the nerve tracts, and that the subjective symptoms complained of were very slight, we can well see why there was some hesitation at the time in making the diagnosis multiple neuritis. The gradual onset of paralysis, the changes in electrical reaction, and the objective sensory symptoms would have been quite in keeping with the supposition of myelitis of the anterior half of the cord; there was a striking clinical resemblance to at least one other case, which I reported upon several years ago; but the further history of this patient has shown that the condition was in all probability one due to a multiple neuritis.

After my first visit the patient was put through a course of mercurial inunction, receiving thirty inunctions of one drachm each, with the result of an immediate improvement setting in (January, 1896), and continuing during the next four weeks. The right knee jerk soon returned. The left one could only be obtained by reinforcement. The volume of the thigh muscles improved, but the right leg improved more rapidly than the left, and the patient was soon able to walk about without the need of assistance. In eight weeks he was able to go about, and during the first half of 1896 had improved so much that by the summer of that year was able to walk about as freely as anyone else, and had even, at my suggestion, taken up bicycle riding, and has often ridden twenty or thirty miles a day. With the exception of occasional cramps in the legs he has had no reminder of his former trouble, nor are his legs at all involved at the present time; only once (in April) did he complain of difficulty in raising the left arm. In June and Nov., 1896, he complained of numbness in small finger of right hand, which disappeared promptly after inunctions. In July, 1896, had slight difficulty in turning tongue to left side. The patient consulted me again in May, 1897, on account of a slight left ptosis. The pupils reacted at that period sluggishly to light and sluggishly to accommodation. The right knee jerk could not be elicited at that time; the left knee jerk was noted as normal. After a course of inunctions the ptosis disappeared. There was no further trouble until November, 1897, when the patient again visited me, complaining of a numbness during the past three days in the left hand and fingers, not in the arm. On examination I found that the grasp was almost nil, that there was distinct weakness and atrophy of the extensor and ulnar muscles, in the distal half of the forearm and in the hand, while the muscles supplied by the median nerve seemed to be of usual strength. An electrical examination made at the time showed there was a marked diminution of faradic response in the distal distribution of the extensor and ulnar nerves, the muscles responding only to strongest currents, and the cathodal contractions being equal to anodal contractions. The contractions were distinctly slow. Since Nov. 11th only few changes

have taken place in the patient's condition. The thenar eminence has become distinctly atrophic, and the inter-osseous spaces more and more distinct. Now the median muscles are paretic as well. The objective disturbances of sensation have appeared in the ulnar area, inasmuch as in this part heat cannot be perceived. All other forms of sensation have, however, remained undisturbed. The electrical changes have become more pronounced. The thenar and the inter-ossei muscles of the left hand do not respond to the faradic current, and in the inter-ossei the anodal closure contraction is equal to the cathodal closure contraction; while in the thenar muscles the anodal closure contradition is greater than the cathodal closure contraction.

The mild character of the symptoms in this upper extremity, the gradual involvement of the musculo-spiral, median and ulnar nerves, the fact that only the distal ends of these nerves are affected, the upper portion remaining entirely normal, the appearance of objective disturbances of sensation, all these symptoms leave no doubt as to the neuritic character of the present affection. The vacillating behavior of the knee jerks, the immobility of the pupils, the transitory ptosis, and transitory palsy of the tongue, and the subjective disturbances of the sensation every now and then during the past two years are quite in keeping with the diagnosis of syphilitic changes in the nervous system. Taken in conjunction with the illness of two years ago, there seems to me little doubt that all the symptoms must be attributed to a multiple neuritis, and in this respect the case is somewhat exceptional, for of the large number of cases of paralysis due to syphilis which have come under my notice, this is the one of two in which I have been able to state that the peripheral nerves have been involved, the other being a case of facial palsy in which the paralysis appeared very soon after specific infection, and in that case, while the specific origin of the palsy seemed very probable, the relation between the initial infection and the paralysis did not appear to be as firmly established as in the case just recorded.—*New York Polyclinic.*

NEURASTHENIA.

BY C. C. HERSMAN, M.D., PITTSBURGH, PA.

"Neurasthenia" is not accepted by all the profession as a term expressing a wide meaning. In fact, it is a word to cover our ignorance for want of a name for the existing condition, they say. However, "neurasthenia" possibly expresses the condition better than any other, and as it is established in medical literature we shall not get rid of it.

It is not a disease, but a condition. It is not limited to any part of the nervous system, but is extremely generalized. It is more often associated with other functional diseases than existing alone. In fact, this is true to such a degree that many medical men deny its existence as a separate trouble; but symptomatology and pathology both point in the same direction, showing a well-marked clinical picture.

Causes: Heredity, most fruitful of all. Other causes are tuberculosis,

inherited syphilis, strumous diathesis in parents, gout, consanguinity (the latter possibly more neuropathic than neurasthenic). Further causes are: Example, defective education, etc. Never tell a child or others in its presence that it is nervous. Subordinate that nature to all others. Too close attention to school and especially to set studies is dangerous. Excesses in alcohol, drugs, tea, and coffee, dissipation, sexual excesses, continued loss of sleep, etc.

Long continued sedentary lives such as teaching, banking, stenographing, etc., without proper outdoor exercise and vacations often prove most disastrous. Any great strain, uncertainty, excitement or worry may develop neurasthenia. A number of times have I had to advise teachers to quit the school-room, and book-keepers, bank tellers and others to seek a change of scenery, atmosphere and climate. Sometimes even a change of vocation.

The symptoms are legion. In many will be found the stomachic and cardiac crisis, atonic dyspepsia, gaseous eructations, palpitation and intermittent pulse. These symptoms we often find in men still attempting to attend to business. They have to be assured and reassured by their physician in order to keep up their courage. So long as they are near a street car line or any other method of readily reaching help or home, or even accompanied by a small child who can run for aid, the symptoms are at abeyance. But so soon as they are beyond reach of anyone, a fear comes over them that an attack may come on and the patient becomes pale, perspires freely, heart palpitates, breathing is labored, gaseous eructations, fullness in precordial and stomachic regions—a pitiable condition. They are moral cowards. With others, mostly women, there is an indescribable uneasiness, a fear that something will happen, often that death or insanity will overtake them. Patient complains of muscular weakness, easily fatigued, sometimes muscular tremor, tendon reaction easily exhausted. One may complain of feeling tired, dizzy, heavy, a feeling of uncertainty, formication and vague sensations. Visual weakness and disorders of hearing, smell and taste may be present.

Patient is easily fatigued mentally or physically. Also disturbances of the digestion, secretion, circulation and the sexal functions exist.

PATHOLOGY.—Little is known as to the true pathological condition of neurasthenia. In a great measure it is speculative. The most plausible theory to my mind is a toxic condition of the fluids of the body. The uræmic and lithæmic diatheses the most often found. The neuron theory advocated by Dercum of this country and one or two authors abroad leads to a better understanding of the physiology and pathology of the nervous system. Many of the profession look upon nervous disease as something beyond their domain; that it is to be relegated to the specialist; that to him alone belongs the province of seeing something more than an abyss black as the river Styx. This is a very great mistake. Until we associate the nervous system with other organs; until we associate nerve cell and nerve tissue; until we see that it is not a system, independent, but a part of a great system, each dependent upon the other, in its correct physiological action as a whole, will it be so. We must apply to the nervous system the pathologic principles we do to any organ or system.

The brain, cord and nervous system must be studied, as coming under the jurisdiction of the general pathologic law governing the system as a whole. Nerve cell and nerve fiber is not governed by a pathologic law peculiar to itself. Van Gieson has said so tritely that I can do no better than quote him: "The nervous system is a part of the organism as a whole and must be amenable to the same laws of disease and decay."

DIAGNOSIS.—Neurasthenia simplex is readily recognized; but when it is association with organic trouble or accompanied by other disease, functional or otherwise, we may have a very complicated clinical picture. I have known traumatic neurasthenia, possibly complicated by the presence of hysterical symptoms, to be diagnosed as a true hysteria. Also have I seen some of the psychoses confounded with neurasthenia. The psychosis has been taken for the inability of intellectual effort of cerebral neurasthenia.

PROGNOSIS.—Neurasthenia is said to be chronic in its course as most nervous and mental troubles are. I deny that many nervous troubles are chronic, because of the time to cure. Just as well compare the course of typhoid to that of cholera morbus and say that typhoid is chronic. Many cases, however, are chronic, as are other cases of disease, beginning as acute. It is a condition of slow recovery, but many times under proper treatment uneventful.

TREATMENT.—Rest, and in many cases, absolute rest in bed. The patient is to go to bed at an early hour and rise late. Serve the breakfast in bed in severe cases. I have followed this plan with great success. Twelve to sixteen hours in bed and some cases the full twenty-four hours. Massage over the abdomen and stomach following the course of the colon, especially when indigestion and constipation are present. Massage the extremities well but gently. Warm sponge bath at bed time and passive motion of joints. These are to be done daily on retiring. Mild faradism two or three times a week. These are to take the place of exercise. These increase the metabolism. I find this is not so successful at home as when the patient is sent away, either to a hospital or, preferably, a private place. Only a few months ago I saw a very rapid recovery of a most aggravated case by this treatment in a private place.

FOOD IS NEXT IMPORTANT.—Milk and eggs is the sheet anchor. Egg lemonade (egg phosphate) is excellent. Milk can be taken by almost anyone in small quantities oft repeated, but some cannot take it. Recently I treated a case who protested, but I insisted, rewarded by two or three attacks of what proved to be extremely severe biliousness, followed by copious vomiting and of course a relapse each time. I put my patient on malted milk with most happy effect. I had no more bilious attacks to contend with and my patient went on to rapid recovery. So soon as exercise is safe, driving is one of the best, provided the patient enjoys it. I have found that any exercise in which the patient takes no interest is to be abandoned at once. With the beginning exercise, cold sponge baths in mornings may be commenced. Many cases need no drugs except to prescribe occasionally for indigestion or acid urine and occasionally a weak heart. When found necessary to give other drugs the following have been found to do good: iron and quinine (bark and steel), phosphates and

phosphites, hypophosphites, strychnia, if there is no irritability of the nervous system.

MORAL SUASION AND MORAL IMPRESSION.—The one thing indispensable is to gain the confidence of the patient. I have seen decidedly good results from a trip to the seashore or to some of the numerous springs when it is not necessary to put the patient to bed all the time. For headaches, joint-aches, bone-aches, etc., accompanying these diseases, I have been using Antipyrin since 1884. Sometimes I combine it with Caffein citrate or Sodium Salicylate. ℞. Caffein citrate, gr. ij to gr. iv; Antipyrin gr. xxx; Elix. Lactopeptine or Elix. Simplicis, oz. j. Misce. Sig.: Teaspoonful every hour till relieved. ℞. Sodium Salicylate and Antipyrin aa gr. xxx; Elix. Lactopeptine or Elix. Simplicis, oz. j Misce. Sig.: Teaspoonful in water every hour till relieved. This is a good prescription where there is any rheumatic diathesis to aggravate the pains.

I find that a small dose oft repeated usually acts nicely. However, I have given Antipyrin in gr. x and even gr. xx at a single dose. There is only one objection to Antipyrin noticed by me. If there is an elevation of temperature it is likely to produce too severe a diaphoresis. If the stomach is irritable the sodium salicylate, though the dose is small, may produce emesis.—*Alienist and Neurologist.*

BED TREATMENT OF MELANCHOLIA.

Dr. Serieux reviewing this question, so much discussed of late as new, points out that Dr. Hurd, of Baltimore, some fourteen years ago urged its employment in certain selected cases of melancholia (Alienist and Neurologist 1883). Serieux claims (*Jour de Méd. de Paris*, Sept. 19, 1897) that cases of acute melancholia of diverse forms (simple, anxious, stuporous) are above all susceptible to rest treatment. Among the symptoms, which according to Serieux indicate in a more or less special fashion bed treatment, are cerebral anæmia, cyanosis, extremity œdema, neurasthenic symptoms, emaciation, chlorosis, stupor, agitation, tendencies to suicide and auto-mutilation, insomnia and circulatory disorder (brachycardy, etc.), respiratory disorder, digestive disturbance and low temperature. Serieux states that all the good physical effects of rest cure are thus obtainable, but also admits that in certain cases the psychic effect, both in the direction of abulia and delusion, may be bad.—*Alienist and Neurologist.*

CARDIAC NEUROSIS OF SEXUAL ORIGIN.

Under this name, Kisch, of Prague (*Presse medicale*) describes a set of symptoms that he has observed in certain nervous young women whose husbands made it a practice to withdraw just before the instant of ejaculation, leaving them overexcited and unsatisfied. The physiological tachycardia of coitus, he says, becomes particularly intense in such women and assumes the form of a very distressing palpitation which at first persists for sometime after each incomplete copulation, and after a while

occurs during the day, repeatedly and without appreciable cause. For a time this palpitation is the only manifestation of the neurosis, but soon the clinical picture is completed by a feeling of anguish, headache, vertigo, syncope, and general weakness. The women are depressed and irritable; they weep on the slightest occasion and take a gloomy view of life. The appetite is impaired, digestion becomes difficult, and they are constipated. The pulse is small, soft, and accelerated, often intermittent and arrhythmical. The arteries, however, are supple, and auscultation of the heart discloses nothing abnormal. All these symptoms will disappear as by enchantment when the practice on which they depend is given up.—*N. Y. Medical Journal.*

MASS MOVEMENTS OF THE HEART.—The diminution in volume undergone by the heart as its ventricles expel their content of blood is accompanied by a change in its form. If the diameters of the heart *in situ* be measured in the opened chest of a supine animal, it is found that during systole the side to side diameter diminishes much—more than the front to back. That is, in systole the heart becomes more or less ellipsoid in cross-section. Probably in the unopened chest and in the erect position its cross-section in diastole as well as in systole is nearly circular. In systole the ventricles are somewhat shortened; but the apex shifts little; it is the base which moves, descending and coming forward towards the apex. This movement of the base is accompanied by a lengthening of the aorta and pulmonary arteries. The latter causes descent of the base of the contracting ventricles, and the descent compensates the shortening of the ventricles, and retains the apex in contact with the chest wall. The cardiac impulse is a protrusion of the chest wall over the surface of the ventricles at the moment just before the expansion of the artery at the wrist. As the ventricles suddenly become hard their long axis becomes more horizontal to the vertical plane of the chest, and is tilted against the resistance of the chest wall. Around the spot where the soft parts of the chest are protruded by the impulse they are found slightly drawn in at the time of each systole. This "negative impulse" is caused by the shrinkage of heart in the air-tight chest as it empties itself, being followed inward by the lungs and to a small extent by the soft parts of the chest wall under the pressure of the atmosphere.

Graphic records of the cardiac impulse can be obtained by one or other of the different forms of cardiographs. Cardiograms, however, in spite of much attention bestowed on their elucidation, still remain unsatisfactory, on account of their variability and the difficulty of disentangling their component factors.

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF
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THE COMPARATIVE VALUE OF CELIOHYSTEROTOMY AND CELIOHYSTERECTOMY IN CASES REQUIRING A CESAREAN SECTION.

BY BARTON COOK HIRST, M.D., PHILADELPHIA.

The impression prevails among physicians in general, I think, that the classical conservative Cesarean section is a safer and better operation than the Porro-Cesarean section or the removal of the uterus after the extraction of the child. On entering practice and for some years afterward I entertained this view, believing that hysterectomy should only be performed when a woman had been very long in labor and many futile attempts at delivery had been made, probably infecting the endometrium; if there was uncontrollable hemorrhage from uterine atony in case of such insuperable obstacles to drainage of lochia as a cancer of the cervix or a bony tumor of the pelvis; or in the presence of a uterine tumor which could only be removed with the womb. Experience has compelled me to change my mind and to regard celiohysterectomy in a case requiring Cesarean section as the preferable operation, with a lower mortality and a greater freedom from complications, not only in the puerperium, but in the patient's future existence.

It is easy to understand the prejudice againt the Porro operation and in favor of the classical Cesarean section, if one recalls the history of abdominal and uterine section for the termination of insuperably obstructed labors.

During the first two hundred and sixty-six years in which Cesarean section was practised upon the living woman the mortality of the operation had been so frightful that any expedient to avoid it was thought justifiable. Induction of abortion for a deformedpelvis symphyseotomy, laparo-elytrotomy, each had its origin in a desire to escape the dangers of Cesarean section, while for the same reason much ingenuity was devoted to the improvement of the technique and to the invention of new instruments in the oldest obstetrical operation—embrotomy.

Finally, in the spring of 1876, Edward Porro performed the first successful celiohysterectomy for obstructed labor. This method of operating so obviously avoided the most fatal dangers of the older plan that it was widely adopted, and in the hands of such men as Carl Braun, Breisky, Leopold, Krassowsky, Frank, Fehling, Tait, and Porro himself, the mor-

tality of Cesarean section was reduced to less than half of what it had been. Scarcely, however, were these results beginning to be appreciated by the medical world at large when Sanger proposed the close and and accurate suturing of the uterine wound, including the peritoneal coveri 'g. Coincident almost with the adoption of this great improvement in the operation there began the aseptic area in abdominal surgery and the appreciation of the common-sense rule that Cesarean section, when required at all, should not be postponed until the patient is at the last gasp, after every other means of delivery had been tried in vain.

By a combination of the three factors—close suturing of the uterine wound, aseptic technique, and early operations—results were secured of such brilliancy as to throw the achievements of Porro and his followers completely into the shade. Meanwhile, however, Cesarean section by celiohysterectomy has undergone an evolution from which the attention of the profession has been distracted by the glamor of the results following the Sanger operation. All gynecologists are familiar with the improvement in the technique of hysterectomy which has made the intraperitoneal treatment of the stump a much safer as well as a much more satisfactory method of operating than the extraperitoneal fixation of the cervix used to be. I had an opportunity of witnessing one of Dr. Baer's early operations by this method, and immediately adopted it in my next Cesarean section, which, it is my impression, was the first to be performed by this technique in America. In the past six years a number of Cesarean sections followed by hysterectomy have been performed by the best and most modern technique ligating the arteries of the broad ligament, dropping the cervix and sewing over it a peritoneal flap. It is too soon, however, to collect statistics of this operation and to compare its results with those of celiohysterotomy. There are disadvantages, moreover, in the mere statistical study of any subject which the practical worker has often reason to appreciate. Without an array of figures, therefore, to support my statement, I can say from my own experience that not only does it add nothing to the danger of a Cesarean section to remove the womb, but, on the contrary, it diminishes the risk of the operation, for it eliminates the possibility of postpartum hemorrhage and lessens enormously the chance of puerperal infection. Certain complications in the puerperum also, as well as others at later periods in the individual's life, are surely avoided by a hysterectomy. These are: retention and decomposition of the lochial discharge, to which the undilated cervical canal does not give free vent if the operation is performed before labor; adhesions between the anterior uterine and abdominal walls; persistent fistulæ communicating with the uterine cavity; rupture of the uterus in subsequent pregnancies and labors; and the necessity for repeated Cesarean sections if the woman is allowed to become pregnant again.

If these incontrovertible facts are taken into consideration, it must be patent to any one that the statistics of the future, studied with discrimination, and taking into account the woman's life history, will demonstrate the superiority in results of the modern Porro operation over the conservative classical Cesarean section.

Whatever one's predilection may be in favor of hysterotomy or hysterectomy, he will admit that certain conditions in parturient women forbid a freedom of choice and compel the selection of the latter operation. It is interesting, therefore, to study the proportion of cases, if only in the light of one physician's experience, in which the Porro operation must be performed and a mere hysterotomy should not be relied upon.

My experience in Cesarean section now amounts to twenty operations performed for the following indications: fibroid tumors, two; dermoid cysts impacted in pelvis, two; cancer of the cervix, one; partial atresia of vagina, one; contracted pelves, fourteen, of which there were one kyphotic pelvis, one obliquely contracted and flat, one transversely contracted, eleven flat rachitic. Out of this number I should have been compelled to perform a Porro operation, no matter what my preference may have been, in eleven cases. In six of the operations for contracted pelvis the patient had been in labor many hours. Futile attempts at delivery had been made with forceps, and in two instances by craniotomy. The uterus was already infected, and the birth canal injured by slipping instruments or by the exercise of unjustifiable force in efforts at extraction. In one of the cases of impacted dermoids the woman had been in labor four days. The pelvic connective tissue and lower uterine segment were extraordinarily edematous, and the endometrium was almost black in color. In the two cases of fibroids attached to the lower uterine segment a hysterectomy was necessary to remove the tumors. In the cases of atresia of the vagina and of cancer of the cervix it was obviously improper to leave the womb behind.

If I may be permitted to judge by my own experience alone, it appears that a Porro operation will be absolutely required in practice a little more frequently than a Sanger, and it seems clear to me that this experience represents about what may be expected by any one who may be called upon to perform these operations. The casess have been distributed over a period of ten years. The women have come to me from all sorts of sources. One case only occurred among my own patients; the others have been referred to the various hospitals with which I have been connected, have been brought to me in emergencies in cabs and ambulances, have been specially referred to me from a distance, or I have seen them in their own homes at the request of their physicians.

It seems fair to assume, therefore, that any one in a position to receive such patients, any practitioner at a distance from expert surgical aid who may have such an operation thrust upon him at a moment's notice, should be prepared at least as often as not to perform a modern hysterectomy as a part of a Cesarean section.

As a matter of fact, among the twenty operations cited above, seventeen have been hysterectomies and only three hysterotomies, and I am convinced that this is about the numerical relation that the two operations should bear to one another. Whether the womb should be removed in the great majority of cases, however, depends entirely upon one's view-point in regard to the justifiability of repeated pregnancies in women who can only be delivered by a Cesarean section. On this matter I am perfectly clear in my own mind. I could not reconcile it with

my conscience to condemn a woman to the probability of a repeated Cesarean section unless she herself and her husband demanded it. This, however, is a remote contingency. In every case in which the matter has been submitted to the patient or her friends, I have been urgently requested to prevent the possibility of another conception. The arguments of those surgeons who advocate a different plan are of course entitled to and certainly receive from me respectful attention, but they are, in my judgment, inconclusive. I read, for example, in one debate upon the subject, the remarkable statement that a physician must take into account only the present condition; that it is nothing to him if his patient becomes pregnant in the future, even though a Cesarean section is again required. As if a physician or surgeon should ignore the future comfort, happiness or safety of his patient, so long as he extricates her from a present difficulty. Luckily the general level of medical intelligence, conscientiousness, and foresight is higher than it would appear to be if such a statement really reflected professional opinion.

Another participator in this same debate claimed that there was no reason nowadays for avoiding a Cesarean section, as the mortality of repeated operations was scarcely greater than that of natural labor. And yet I happen to know that this operator's mortality in the operation has been thirty-three per cent. Even if it were possible for the most skilful and experienced operator, dealing with a patient in the most favorable condition and amid the best surroundings, to eliminate the dangers of Cesarean section, it would still be impossible to be certain that a woman would on the next occasion be so situated that she could command the best attention. Hence Cesarean section is and will remain a dangerous procedure, with a considerable mortality. It has to-day, in this country, a death-rate, of about forty per cent. taking into account all the operations of which a record can be procured, and the statistics have not improved in recent years.

The history of a patient referred to me last autumn for a Cesarean section well illustrates, I think, the fate in store for many women who can only be delivered by uterine section. She had given birth to two or three children previously with the greatest difficulty, even after embryotomy, and her physician told me she could not, in his opinion, survive another such operation as he had been compelled to perform the last time. I found rachitic pelvis with a conjugate of about seven and three-quarter centimetres or a little less, and an overgrown child, the head of which, even at the seventh month, could not be pressed into the superior strait. The woman stated that her other children had all been overgrown at birth, none of them, she said, weighing less than twelve pounds. As she and her husband desired a living child, I recommended a Cesarean section at term. This recommendation was accepted by the family physician, the husband, and the wife, after careful consideration. The patient accordingly entered the University Maternity to await the date of the operation. Unfortunately she grew very homesick and begged me to allow her to return home for a week, promising faithfully to return to the hospital in good time for the operation. I cautioned her against staying away long, pointing out to her the difficulties and dangers

of her former labors, and warning her not to run the risk of falling in labor in the small town in which she lived, and where she could not obtain the skilled attention that she needed, and whence she could not perperhaps be transported to the city in time. She seemed to be impressed by what I said, and I had no doubt she would return. As it appeared later, however, she was not only homesick but frightened, and when she left the hospital she evidently determined not to come back. On her return home she failed to notify her physician, and deliberately kept him in ignorance of the fact that she was in labor till she had had hard pains for thirty-six hours. The os was then dilated, and her physician thought it too late to send her to the city. He was led to believe, moreover, that there was a chance for spontaneous delivery, as the head appeared to be descending the pelvic canal; but he was deceived, as many another has been, by a steadily increasing caput succedaneum and the shallow pelvis of rachitis. While he was awaiting further progress the woman ruptured her uterus and died with the child undelivered. Now, this woman had considerable intelligence; she had had a practical demonstration of the dangers of delivery by the natural passage in several dreadful experiences of inordinary delayed labors, prolonged anesthetizations, difficult embryotomies, and complicated convalescences; she had been impressively warned never to incur the risk of delivery by the vagina again; her physician and her husband had urged her to have the Cesarean operation performed and she had consented; yet she deliberately chose to accept the risks of another difficult labor, either because she thought the Cesarean section was unnecessary or was afraid to undergo it. What is to be expected, therefore, of the more ignorant hospital patient? She has a Cesarean section performed, say in her first pregnancy or labor. She recovers from the anesthetic and finds herself safely delivered without any difficulty to herself and with very little suffering afterward. She is told that she can never have a child in the natural way and must be always operated upon in subsequent labors. It is doubtful often if she believes it or whether she will remember the warning; or she may be so placed that it is impossible for her to secure the services of an expert; so that her next labor will find her not improbably in the slums under the care of a midwife, or of a physician not much better informed as to contracted pelves, and her life will very likely pay the forfeit.

Taking into account, therefore, the unavoidable though small mortality of Cesarean section under the most favorable circumstances; considering, moreover, the impossibility of always securing the best circumstances in many cases, it seems perfectly clear to me that it is unjustifiable to subject a woman with an insuperably obstructed pelvis to the dangers of subsequent pregnancies and of a repeated Cesarean section. Once this point is conceded it is unnecessary to argue further for a hysterectomy. No one can contrast in actual practice the greater facility and rapidity with which a Porro operation can be done, the entire freedom from many of the risks of the puerperium after the removal of the womb, the impossibility of many complications that are likely in the Sanger operation, without preferring the former to the latter operation.

One argument that has appealed to me more strongly than any other against hysterectomy, and that would influence me had I not found its answer in my own experience, is the disadvantage of the early artificial menopause, the symptoms of which are rather more annoying, I think, after a hysterectomy than they are after a simple oophorectomy. But there is something in the function of lactation which seems to neutralize the effect of the removal of the sexual organs. I have been many times struck with the absence of the disagreeable phenomena in the woman who nurses her child after a Porro operation. Nor do these symptons appear later, for by the time the child is weaned the system is adjusted to the absence of the uterus and ovaries, so that the woman experiences none of the troubles usually incidental to the artificial menopause.

In still another direction the consequences of puerperal hysterectomy differ apparently from those which follow the operation at other times. We have all, I dare say, had reason to deplore in some cases the contraction of the vagina and the entire loss of sexual feeling which are occasionally observed after a hysterectomy, say, for a fibroid tumor. It is always difficult to obtain information about these matters, but as far as I can learn there has not been such a result after any of my Porro operations.

SOME COMMON MISTAKES IN GYNECOLOGICAL DIAGNOSIS.

BY. DR. J. C. WEBSTER.

Symptomatology and clinical history are determinate and often cannot be distinctly correlated with various lesions. Other than local factors must be taken into account. Of chief importance among these is the neuropathic state. A neurotic condition may be developed from causes foreign to the pelvis, and this may manifest itself in intense pain referred by the patient to the pelvic lesion. In another set the symptoms of pelvic pain are developed as one of the phenomena of a neuropathic state, there being no local lesion of any kind.

Mrs. H. complained of pain in the bladder and was treated for cystitis without success. Cystoscopic examination showed a normal mucosa except a congestion of the right ureteric orifice. Palpation of the loins revealed anenlargement on the right side. Bacteriological examination of the urine showed the tubercle bacilli. Operation resulted in the removal of a tuberculous kidney.

Another case is cited in which painful micturition was an early symptom of locomotor ataxia. A chronic parametritic abscess had given symptoms of cystitis. A Russian lady-doctor was treated for cystitis for some time without success. Examination showed a small fibroid on the anterior uterine wall near the attachment of the bladder. Cancer of the rectum gave symptoms referable to the coccyx which was excised under the belief that coccygodynia was the trouble. Papillomata of the bladder may give rise to hematuria which may often suggest the kidney as the source.—*Post Graduate.*

NOSE AND THROAT.

IN CHARGE OF

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THE LOCAL TREATMENT OF PAINFUL ULCERATIONS BY ORTHOFORM,

WITH SPECIAL REFERENCE TO THE UPPER AIR PASSAGES.*

BY EUGENE S. YONGE, M.D., EDINBURGH.

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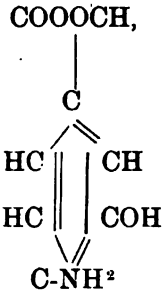
Under the name of orothoform, a new synthetic product related in constitution to cocaine has been introduced by Professor Einhorn and Dr. Heinz, of Munich, for the production of local anæsthesia. From a chemical point of view the history of the building up of orthoform is of some interest, and may be epitomised as follows:—The authors of the investigation set themselves the task of finding the hypothetical molecule hidden in cocaine or its derivatives which would produce local anæsthesia without accompanying toxic effects.

It is assumed that cocaine is constituted of a double ring in which a benzoyl-oxy-piperidine-carboxylic methyl-ester (having a methyl group attached to the nitrogen) is associated with a hydro-aromatic ring of the hydr-benzoyl-oxybenzoic methyl-ester. The analytical observations of Stockman, Filehne, Ehrlich and Poulsson, who split up the molecule, and showed that none of the products obtained by this process were capable of producing local anæsthesia; and the more or less synthetical experiments of Liebreich, Poulsson and Ehrlich elucidated matters so far that it became a question as to whether the peculiar anæsthetic quality of cocaine was dependent on its double-ring nature, on some property of the first ring, or on an influence existing in the hydro-aromatic ring. The last was a reasonable hypothesis, more especially since it was known that certain other aromatic substances, such as methylene blue, possessed the property of relieving pain. Impelled by the foregoing considerations, a prolonged and elaborate investigation was undertaken by Einhorn and Heinz into a large number of these substances, with the result that they were led to conclude that all aromatic amidoxyesters cause local anæsthesia, though in differing degrees of intensity, and with varying powers of irritation. A substance (p-methyl amido-m-oxybenzoic acid) of this class,

*Read before the Manchester Therapeutical Society.

to which the trade name of "orthoform" has been given, appeared to act most strongly as an anæsthetic, and not at all as an irritant. It has the following constitutional formula:



Orthoform is a white voluminous crystalline powder without taste or smell; it is not hydroscopic, and melts at 120° C. Free orthoform combines with hydrochloric acid, forming a hydrochloride which is more soluble than the basis powder, but causes irritation to some mucous membranes on account of its acid reaction. The hydrochloride (price 6s. 6d. per ounce) is the preparation on the market, and the dose is eight to sixteen grains. The anæsthetic presents a triple claim to recognition, in that it is sparingly soluble, is non-toxic, and is powerfully antiseptic. On the other hand, it is a disadvantage that the substance will not act on unbroken skin, nor, with certain reservations, on intact mucous membranes, for its strong anæsthetic properties are only manifested where nerve endings are exposed. The slow solubility leads the anodyne to exert its action economically on the tissues, and, unlike its rapidly soluble congener cocaine, only sufficient is dissolved to produce and keep up local insensibility, which therefore becomes prolonged. In from five to ten minutes after application anæsthesia of the denuded surface to both touch and pain commences, and it reaches its consummation within a short period of time. The effect lasts from a few hours to five or six days, and there is, in the majority of cases, perfect or nearly perfect analgesia, the patient experiencing the sensation of the offending part having been cicatrised over or "enamelled." Suppuration is usually markedly diminished and healing accelerated.

The observations which I have made on the pharmacology and clinical effect of orthoform have been principally confined, on the one hand, to a consideration of such preparations as would be suitable for applying to the upper air passages, and, on the other hand, to the effect of the drug on ulcerations of these regions. Orthoform is soluble in water, the basis powder very sparingly, and the hydrochloride much more freely. It is also dissolved by ether and spirit. The drug is practically insoluble in normal saline solution, in glycerine, and in paroleine, and although suspended in the last-named vehicle, the particles of powder are too large to pass through the ordinary atomiser. The most suitable preparations appear to be:

(1) *The crude powder*, either alone or mixed with equal parts of lycopodium, which should be accurately insufflated on the required area, since

orthoform only takes effect where it comes in contact with the abraded parts, and its influence does not extend to the tissues beyond.

(2) *Pastilles*, with the following formula: ℞ Orthoformi, gr. iij to v; liq. cocci, q.s.; saccharin, gr. ¼; glyco-gelatini, q.s. The pastilles are useful in mouth, tonsillar and posterior pharyngeal affections, but less so than the two succeeding preparations.

(3) *A saturated solution of orthoform in collodion*, forming a species of "varnish." This is useful in those cases in which an ulcer is exposed to much friction, but as it causes acute smarting it is advisable to primarily anæsthetise the ulcer either with cocaine or with orthoform in powder.

(4) *A spray*, with this formula: ℞ Orthoformi, gr. v; sp. vini rect., acquæ, *ää*, *m* l. This is perhaps the best form in which to administer orthoform for nasal and laryngeal ulceration. The spirit evaporates after contact with the parts, leaving the precipitated powder evenly distributed over the affected area.

(5) *An ointment* (ten per cent.) made with any good ointment basis.

(6) *An aqueous solution* (ten per cent.) of the hydrochloride as a paint.

The action of orthoform on the unbroken mucous membrane of the mouth, naso-pharynx, and larynx is, in my experience, the following: Neither the free orthoform (basis powder) nor the hydrochloride anæsthetise sufficiently to allow of surgical action. When applied to the tongue, inner surface of the cheek, or to the pharynx, a numb sensation supervenes in the course of about five minutes, but there is little anæsthesia. The effect on the larynx is to reduce reflex irritability. A peculiar feeling, described as similar to that produced by cocaine, is experienced in five minutes; in a few more minutes this relative loss of sensation vanishes, but if before its subsidence a probe be introduced, and the vocal cords and interior of the larynx touched, although a species of "gagging" ensues, there is no laryngeal spasm or cough. In the same patient a similar procedure without the previous introduction of orthoform causes intense discomfort and a fit of coughing. The intact nasal mucous membrane is also slightly amenable to the influence of the drug. A feeling of numbness is evidenced in about two minutes, and this merges into real anæsthesia, which is, however, feeble and transient.

I have had the opportunity of testing the anæsthetic value of orthoform in eighteen patients who suffered from painful ulcerations of the upper respiratory tract.

Toxic effects were not noted in any of the cases, but there was occasionally some slight burning for a few minutes after the application of the hydrochloride. This failure to discover toxicity is compatible with the statements that over twelve drachms have been sprinkled on a broken surface in the course of the week, also that thirty to sixty grains have been administered daily to rabbits, and forty-five to ninety grains to dogs, without evil effects during life or the *post-mortem* discovery of viscereal changes. Orthoform fails to produce any results on an ulcer unless the dual precaution is taken to apply the drug directly to the loss of surface, and to ensure its retention there.

No relief was experienced by patients suffering from either catarrhal pharyngitis or quinsy.

The drug in doses of eight to sixteen grains is said to be of value as an anodyne in ulcer or cancer of the stomach. In cases of ulcer, complete relief for three or four hours has been obtained, and one patient with cancer benefited in this way for twelve hours. Orthoform is also declared useful in burns, ulceration of the vulva, chronic cystitis, traumatic lesions of the urethra, gonorrhœa, and other cases.

The antiseptic action of orthoform appears to be demonstrated by the rapid diminution of purulent exudation in several of the cases encountered, and the speedy healing of the ulcer. In a case of acute gonorrhœa injections of orthoform solutions were followed by the disappearance of gonococci in four days, and the complete cessation of the blenorrhagia.

Finally, if further observations confirm the results already published, it would appear that orthoform is entitled to take a position in the gamut of local anæsthetics applicable to the upper air passages. It seems probable that it will replace—by virtue of its insolubility and innocuousness—its relative, cocaine, when long anæsthesia on ulcerated surfaces is wished for: be replaced by the more reputed drug when short insensibility of intact mucous membrane is desirable, and on occasion supplement it. —*British Medical Journal.*

THE MICROBES OF THE NOSE IN HEALTH.

BY W. H. PARK AND J. WRIGHT.

"Annal. des Mal. de l'Oreille," Feb., 1898.

The authors report in a short paper the results of their experiments which were undertaken in view of the divergence of opinion expressed by various authors on this point. As Thomson and Hewlett's results seemed to indicate some source of error in Wright's previous research, particular attention was paid to the danger of contamination of specimens in their passage through the vestibule. A series of thirty-six normal individuals were chosen, the vibrissæ were removed with sterilized scissors, and the skin of the vestibule washed with 1 in 2,000 perchloride. A freshly sterilized speculum was used for each patient, and the mucus was taken from between the septum and inferior turbinate as far back as possible, either with a platinum loop or a cotton swab sterilized and passed through a flame. Tubes of gelatine and serum or agar and serum plates were employed.

The results of culture were as follows:

No bacteria in the cultures in	6 cases.
Less than fifty colonies in	8 "
Between fifty and one hundred colonies in	8 "
More than one hundred colonies in	14 "
	36 "

Sterile 6
Non-sterile 30

In five out the six sterile cases the mucus was withdrawn on the plati-

num loop, and the quantity was so small that this may in part explain the negative results.

Two rabbits were killed, the crania contents removed antiseptically, and the nose entered from the upper surface. Cultures of the nasal mucus contained numerous colonies.

Differentiation of the micro-organisms was not attempted, except in the case of streptococci, which were never met with. This result contrasts markedly with cultures made from children living in a "home," for among them streptococcus was present in sixty per cent. In none of these cases was the nasal mucus quite normal in character.

With regard to the supposed bactericidal property of nasal mucus, the authors object that diphtheria or pseudo-diphtheria bacilli persist in the nasal mucus of patients convalescent from benign nasal diphtheria. The result of a test of this supposed quality in the nasal mucus of the rabbit is striking. One drop of an extremely virulent culture of streptococci was instilled into the noses of two rabbits. Both animals died with general septicæmia within three days. The cocci had penetrated the mucosa and reached the tissues of the pharynx.

A specimen of nasal mucus repeatedly sterilized by heat (55° C.) was found to have no apparent bactericidal effect on the bacillus of diphtheria, pseudo-diphtheria, staphylococcus, streptococcus, and a coccus found in normal mucus from the nose. A similar result was obtained with non-sterilized mucus, though this had a markedly bactericidal effect on bac. anthracis.

These results are therefore at variance with both those of Wurtz and Lermoyez and of Thomson and Hewlett. At the same time they demonstrate that the nasal fossæ are not so rich in microbes as was formerly supposed *à priori*. This, no doubt, is due—

1. To the action of gravity, causing a constant flow of fresh mucus from the upper parts which are not freely accessible from the air currents.
2. To the action of the cilia, which aids the effects of gravity.
3. To the fact that the mucus, though not bactericidal to most microbes, is not a good culture medium.
4. To the filter action of the vibrissæ (these hairs are absent in children and sparse in women).
5. To the fact that inspired air usually contains few pathogenic germs.

The authors conclude that the nasal mucus is ineffectual as a safeguard against the bacteria which can develop in the blood, or the secretions o other individuals, and that it is unable to cope with virulent organisms introduced upon nasal instruments.—*Journal of Laryngology.*

LARYNGEAL NECROSIS IN ENTERIC FEVER.

Sir George F. Duffey, M.D., made a communication on this uncommon complication of enteric fever, based on a case that had been recently under his care in the City of Dublin Hospital. He referred generally to the occurrence of laryngeal complications in enteric fever and their relationship to the typhoid process, and mentioned the opinions that had been

advanced as to their being of a specific or of a non-specific nature. The patient was a delicate-looking laboring man, aged 22. His attack of fever was characterised by a continuously high temperature, bronchitis, drowsiness, and great prostration. In the fifth week, when he appeared to be convalescing, he complained one morning, after a fit of coughing, of pain in his throat and difficulty of breathing. These symptoms were slightly relieved by treatment, but recurred next day in an aggravated form, and accompanied with noisy stridor, hoarse and weak voice, slight dysphagia, and great prostration. The epiglottis was very dependent, but there was no obstruction to the entrance of air into the lungs. He died on the seventh day after the onset of the laryngeal symptoms—the forty-fourth day of his illness. *Post-mortem* examination showed typical typhoid ulceration in the ileum in process of cicatrisation, with enlargement of the mesenteric glands and of the spleen. The larynx, which was exhibited, presented on its removal a small dirty-yellowish spot on the external and posterior surface of the plate of the cricoid. An incision through this spot opened a small abscess, which contained about half a drachm of pus. The abscess cavity separated the swollen perichondrium from the underlying cartilage, which was roughened and eroded. The President referred to a very similar case that he had reported seventeen years ago, and to the comparatively few cases of the kind occurring in Great Britain and Ireland. He quoted statistics as to the frequency of laryngeal complications in enteric fever, and discussed the question of performing the operation of tracheotomy in cases presenting such urgent symptoms as those that had occurred in both his cases.—Royal Academy of Medicine in Ireland.—*British Medical Journal, Feb., '98.*

DANGERS OF THE NASAL DOUCHE.

Irrigation is called for only when the nasal fossæ rcequire leaning of pus and crusts, for instance, in idiopathic ozæna. This affection is mainly limited to the nasal fossæ properly so called, and irrigation is in such a case the most fitting form of procedure. An ordinary syringe or enema syringe with suitable nozzle should be used. In all other nasal affections irrigation is inadequate or useless; it is even dangerous. Repeated flooding of the mucous membrane may give rise to olfactory lesions. Antiseptics are highly injurious, and pure water is badly borne; the physiological solutions of sodium chloride, sod. bicarb. or sod. sulph are the only harmless liquids. In numerous cases irrigation has caused the sense of smell to be temporarily or permanently diminished or lost. Distressing frontal or occipital headache may result owing to the liquid passing into the sinuses. The injection of irritating liquids may even set up inflammation of these cavities. The most skilful and careful irrigation is insufficient in many cases to prevent the resulting headache. A very grave complication s the penetration of the liquid into the middle ear, suppurating otitis media occasionally supervening. In acute coryza, especially in children, douching should never be practised. In one such case known to the author, mastoiditis followed irrigation of the nasal cavities. The predis-

position to otitis is increased after retro-nasal operations, in particular after ablation of adenoid vegetations. (LICHTWITZ, *Sem. Med.*, November 26th, 1897.)—*British Medical Journal.*

WHAT IS THE BEST OPERATION FOR ADENOIDS?

The diligent reader of rhinological literature can hardly have failed to notice that for the removal of masses of lymphoid tissue in the naso-pharynx, commonly termed "adenoids," very different operative procedures are advocated. Galvano-cautery, the cold snare, curettement, forceps, each has its supporters. Some operators seldom use an anesthetic, others invariably do. The position of the patient is as various as the operative features, some surgeons preferring the sitting posture, others what might be termed the recumbent semi-prone, and others again to have the vertex dependent, etc.

The use of Gottstein's curette as the main dependence appears to prevail as against the use of cutting forceps, though many operators combine their use. Dependence upon the curette alone appears to be irrational, and, in fact, has been deceptive in its results by reason of the structure of the lymphoid growths. The lymphoid portions of these are held together and attached to the vault by fibrous and vascular tissue, forming sessile pedicles and septa, a sort of placenta, varying very much in its extent and firmness. Now, when this fibrous tissue prevails, and the growth is, therefore, termed "tough" and fibrous, it is not reasonable to expect that an instrument like Gottstein's curette, which scrapes rather than cuts the growth, will thoroughly remove it. A small, strong, sharp forefinger nail, such as possessed by some surgeons, is eminently superior to Gottstein's instrument, especially in curetting out the narrow recesses on the wall of the space anterior to the Eustachian prominences, and at the entrance of the choanæ; yet it is well known that the portions of fibrous pedicle and lymphoid tissue left after its use often lead to a return of the growth. These cannot be thoroughly removed by even a very strong finger nail, much less by a curette scraping over the surface. Some form of cutting forceps is necessary. Such forceps, undoubtedly, require more skill and care for their use than the curette, but then, skill, care and deliberation are far more necessary for the proper performance of the operation than is generally supposed.

With many operators "ignorance is bliss," for, after a hasty operation with the curette, during which the phenomenal hemorrhage encourages them to believe they have been heroically thorough, they fail to explore the cavity a week or two after, and to discover that close to the choanæ a considerable mass yet blocks the way, and nasal breathing is still obstructed.

Haste in operating is mainly due to the very free hemorrhage, and its menace to respiration. Hence it appears wise to place the patient semi-prone, with the head sufficiently dependent, and to proceed quickly, but without haste. This, of course, necessitates complete anesthesia, and

sufficiently profound to insure the quietness of the patient, say from five to eight minutes, during which time the finger nail and curette can be rapidly used, to be followed by the proper cutting forceps guided along the left forefinger, which (surgeon on the right of the patient) hooks forward the soft palate and constantly touches the sharp edge of the vomer.

The only fairly practicable way of telling whether all the vegetations have been removed is by palpation, and this must be carefully done, or otherwise portions will escape detection.

The above observations are in accord with the experience of many competent operators, and are believed to be in accordance with those general surgical principles which insure safety and success, whereas the methods pursued by many operators are neither safe nor successful. There appears at present to be too much stress laid upon the rapidity of operating and brief anesthesia, and too little upon the difficulties and dangers attendant upon the complete removal of some of these growths.

No matter how complete the operation appears to have been, a careful examination of the naso-pharynx should invariably be made a week or two afterward.—Editorial in *The Laryngoscope.*

EMPYEMA OF THE MAXILLARY ANTRUM.

BY DR. A. W. STIRLING.

Among other valuable points brought out, the author alludes to the site of the pain, which he says may be referred to the cheek, but often to the root of the nose and the supra-orbital region. Again, the discharge of pus, though usually through the nose, may be in the throat. He insists that the exploratory puncture is the only certain mode of diagnosis. A warning is given that even in this pus may not be found the first time if the natural opening is large, the pus having drained off before the puncture was made. He places emphasis on the value of application of strong solutions of nitrate of silver after the sinus has opened.—*The Laryngoscope*, June, 1898.

ICHTHYOL INHALATIONS IN ACUTE LARYNGITIS.—According to *Nouveaux remèdes*, May 8th, quoting from *Vratch*, xix, 1898, No. 8, p. 223, Cieglewicz (*Przegl. lek.*, January, 1898) has found that inhalations by means of an atomizer of a cold two-per-cent. solution of ichthyol repeated twice daily, and not too deeply inspired for fear of producing nausea and vomiting, have given excellent results. The author has used the treatment both in adults and children, in the latter in cases of false croup. No ill effects have followed.

FORMALDEHYDE IN ATROPHIC RHINITIS.—Dr. George L. Richards (*Laryngoscope*, May; *Atlantic Medical Weekly*, May 28th) speaks highly of formaldehyde in atrophic rhinitis. He uses it as follows: After removal,

by means of a syringe and cotton applicators, of all the crusts and *débris* with a weak alkaline solution, each nostril is thoroughly washed out with a solution of formaldehyde, containing about five to ten drops of the forty-per-cent. solution to eight ounces of warm water. As it is very irritating even in dilute solutions, a preliminary spraying of the nose with cocaine is advisable. It produces a temporary sense of smarting in all of the nasal mucous membranes with which it comes in contact. At home he has one drop added to the solution which the patient uses in the douche cup for the daily cleansing. Under its use the crusts diminish in number and all unpleasant odor ceases.

ADENOIDS.

All young patients suffering from acute inflammation of the tympanum have hyperplasia of the pharyngeal tonsil or adenoids. This fact cannot be gainsaid or confuted. Cases occur where the quantity of this adenoid tissue is inconsiderable, but the location of it near the Eustachian tube, and its peculiar erectile properties, explain its evil power. The symptoms which most markedly present the conditions found in the child whose nasopharynx is filled with an excessive amount of adenoid tissue are principally objective. The typical points are the facial appearance and the breathing habits of the individual. The child usually breathes with its mouth open. The breathing, especially at night, is labored and distressed. The results of this mouth-breathing are evident in the pinched look given the face, while the obstructed nose causes an imperfect growth in the facial bones (as pointed out by Meyer and Ziem), which is shown by the high-arched palated and narrow upper jaw, with the crowding together of the teeth in consequence of the faulty nutrition, induced by imperfect circulation. EDMUND B. SPEAR.—*Annals of Gynecology and Pediatry.*

EPIDEMIC DIPHTHERIA.

This, as might have been expected from Dr. Newsholme, is an admirably worked-out study of diphtheria statistics. The author makes out a very complete case for his contention that "in diphtheria we have to deal with a disease which creeps slowly from place to place, in which months or even several years may elapse before it takes firm root and begins actively to propagate itself." Nor will it be questioned that some other factor besides personal infection must be concerned in its spread. This other factor is believed by Dr. Newsholme to consist essentially in protracted drought, and it must be allowed that he has a great array of facts to bring forward in support of this somewhat unexpected conclusion.

Review of a research on the origin and spread of the disease from an international standpoint, by Arthur Newsholme, London.—*British Medical Journal.*

PAEDIATRICS.

IN CHARGE OF

ALLEN M. BAINES, M.D., C.M.

Physician, Victoria Hospital for Sick Children; Physician, Out-door Department Toronto General Hospital. 194 Simcoe Street, and

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FIBRINOUS RHINITIS.

In *Pediatrics* of May 1st, '98, there appears a very useful abstract of a paper by A. Hennig in the *Wiener Med. Wochensch.*, 1897, xlvii., 1606, entitled "Chronic Diphtheria."

Cases in which membranous deposits and other local signs persist with more or less intensity for anything over three weeks he calls chronic diphtheria, more particularly if, as is usually the case, the site of the membrane is unusual; *e.g.*, the upper end of the pharynx, the nasopharynx, or the floor and posterior portions of the nose, or the deeper lacrmæ of the tonsils. He gives as accessory causes certain debilitating constitutional disorders, as syphilis, tuberculosis, and rickets. Fibrinous rhinitis occurred this spring in a very interesting case of sporadic hemophilia under the writer's care in the Hospital for Sick Children. Hennig's cases showed all gradations of severity, from those showing no inclination to spread and little or no subjective and constitutional symptoms to those with very grave constitutional infection, swollen glands, and subsequent paralysis of pharynx and of accommodation. Rhinitis fibrinosa has often been seen to be infective, producing in the infected either a typical rhinitis fibrinosa or a typical diphtheria. Hennig's conclusions are as follows:

1. Rhinitis fibrinosa is intimately related both in a clinical and in a pathologico-anatomical matter to Bretonneau's diphtheria, and must not be looked on as a disease *sui generis*.
2. Lœffler's bacillus cannot be the cause of rhinitis fibrinosa.
3. Thus the view that Lœffler's bacillus is not the cause of the disease clinically called diphtheria has received further confirmation.
4. The etiology of fibrinous rhinitis is still obscure.
5. Both fibrinous rhinitis and diphtheria are influenced by the symbiosis of numerous saprophytic and pathogenic micro-organism, besides other factors which are as yet unknown.

J. T. F.

WHEAT PRODUCTS IN INFANT FEEDING.—Dr. L. Duncan Bulkley, in a brief communication with this title, stated that in the case of infants whose nutrition was at fault, particularly when this was indicated by a

persistent eczema, he had obtained the very best results from adding a certain wheat product to the food. He did not wish to be understood as favoring artificial feeding, and least of all the numerous proprietary infant foods, for he firmly believed that nature and human experience plainly taught us that breast-milk was ordinarily the food *par excellence* for infants. The wheat product to which he had reference, and which he had used extensively for the past ten years, was prepared according to the following directions, which must be rigorously adhered to:

A teaspoonful of wheaten grits or crushed wheat is put in a pint of cold water in a china receptacle, in a double boiler, at the time of preparing the evening meal, and is allowed to cook slowly for two hours. It is then covered and set aside until morning, when it will be found more or less jellified. Some water should now be added so as to make it quite thin, and it is then cooked for two hours more. After this second cooking it is rubbed through a fine sieve with the bowl of a spoon, more water being added if necessary. The hard and indigestible portions of the wheat are left on the sieve, and the gelatinous mass which passes through contains all the nutritive portion of the wheat. This portion will readily pass through the feeding-bottle. It must be prepared fresh every day. For very young infants it is sufficient to add one or two teaspoonfuls to each feeding, while older children may take as much as a tablespoonful of it. It is slightly laxative and exceedingly digestible. The philosophy of this method of preparation is as follows: The prolonged heating extracts all the soluble elements of the whole meal, including the starch, gluten, and phosphates; and at the same time sets up a fermentative change which causes a partial digestion of the mass. This fermentation is checked by the second cooking. The speaker added that this wheat product, when rightly prepared, represented the nearest approach to a complete food, next to milk, and it was very cheap and easily procured. A weak solution of this wheat jelly would be found an admirable substitute for barley water in infant feeding.—*Pediatrics.*

NOTICE.

The editors of the Pediatric department of THE CANADA LANCET earnestly request such of our many readers who have had any cases of Tetany or Tetanilla in practice to send full notes of such cases occurring in infants and young children—supposed etiology, treatment and results; in fatal cases, post-mortem appearances, macroscopic and microscopic.

It is the wish of THE LANCET to collect as many cases as possible, to arrange in groups, and possibly add some small quota to the very scant literature on this rare and interesting disease.

Kindly address any communications to DR. ALLEN BAINES, 194 Simcoe Street, Toronto.

The Canada Lancet

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Editorial.

LODGE PRACTICE.

This perennial subject was brought up again at the July meeting of the Medical Council, and after very free discussion the resolution offered was rejected and the question shelved. We are free to admit the wisdom of this action. The time does not seem opportune for waking that dog out of his slumbers. He will prove to be a Cerberus and to have three heads, all "open for business." There is no room for two opinions on the merits of the case. The "fraternal" orders (whose guiding principle is cold-blooded "business," and the bulk of whose "fraternity" is at best nothing more than ordinary neighborliness) hold out, as one of their chief inducements to prospective candidates, the free medical attendance that membership brings with it. We know for a fact that in many cases the cheap insurance is a secondary consideration; and while we wish to give full credit to these orders for the cultivation of a spirit of thrift and foresight among a portion of the public who might otherwise save but little, let us in the name of common honesty request them to cease plundering the profession to whose training and integrity they owe their very exist-

ence. "Plundering" is not too strong a word, for no unbiassed arbiter, chosen say from the bench or the banking circles of the country, could avoid the conclusion that the profession is bled day by day by the system now in vogue.

But, in our opinion, it would be better to settle first the question of contract practice in other forms. The Council should declare it to be "infamous in a professional respect" to do as is done in this city, where large institutions employ, but do not pay, a medical man, and bring pressure to bear on their employees to go to him. In one instance of which we are aware the loss of his position was threatened to a man who preferred, since he had to pay the fees himself, to pay them to his own physician rather than to his master's medical man. Salaried appointments, such as those of jail surgeons, railway surgeons, medical referees of insurance companies, and so on, are, we need scarcely point out, on an entirely different basis.

It will be found on investigation that, as usual, a compromise will be the best thing. No Government could dare to stir up the lodge and corporate influence of the Province by sustaining the Medical Council in declaring lodge practice "infamous in a professional respect," just as, on the other hand, no Government could withstand the adverse influence of the profession, unitedly applied, in the general elections. But some such compromise as the following would, we are convinced, meet the requirements of the case, and could be managed, we think, by conference between the Council and Society representatives. Let the lodges elect their doctors as now. Let the doctor have his books, so far as they refer to his lodge patients, audited, say every six months, by the lodge officers, and his work paid for at living rates, say in Toronto $1 for each visit or consultation. We are in a position to know that this would in many cases lessen the physician's income, and of course save the lodge so much. But it would be professional. And the great advantage would be that the lodge would at once find it to its interest to frown down unnecessary demands upon the doctor, which really constitutes half the work he does. Every one who has tried it knows how careful the worthy member of the lodge is to ask as little as possible of what costs him nothing, and how few such members are, as a rule; while the onus of adding to the expenses of the lodge would thus be laid, not upon the physician, but upon the member who needlessly calls for his services.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION.

In our last issue we called the attention of the reading portion of the profession to this Library, which has now been in existence for about ten years. Though first contemplated by a few of our prominent Toronto confreres, it has been a Provincial Library from the beginning. The Ontario Medical Association, in recognition of its advantage to the profession throughout the Province, has shown its fraternal interest by voting a substantial bonus each year. Long may it continue to do so, and be an annual reminder to every one of us that we, too, may do something to

encourage an institution whose only aim is the advancement, not only of the actual members of the Association, but also of the individual members of the profession throughout the Province. In fact, our provincial brethren are treated in a more liberal manner than are the city members of the Association; while the latter are compelled to subscribe for stock in the Association and pay an annual fee, the former have only to write to the Librarian and ask for any book or books on the shelves, all the cost entailed being the boxing and express charges. In this way any physician in good standing may consult the authorities on any subject at a trifling cost. Who among us would not give considerable to have at our service the latest literature upon puzzling cases which turn up every few months? The library, with its four or five thousand complete volumes, and its list of monthly and weekly journals, offers the opportunity which we trust our rural and urban readers will promptly and persistently take advantage of.

Editorial Notes and Clippings.

THE TONGUE AS A CLINICAL GUIDE IN DISEASE.

A recent number of the *Indian Medical Recorder* gives the following in regard to the tongue:

A broad, pallid tongue, with a loaded base, says atony, and refers you to a want of action of the entire viscera below.

The remedial agents would be cathartics and tonics, especially those mild but effectual in character.

A shrunken tongue, pinched in expression, indicates functional inactivity of digestion, and requires great care in choice of food as well as quantity. In this condition of tongue we have atony also.

It is the tongue of advanced fevers, inflammations of the mucous membranes, and want of assimilation, hence great caution both of remedies and food. Here we must not use cathartics. Mild aperients may be carefully used.

A contracted, pointed tongue, with dryness and dark fur, is the usual tongue of typhoid fever and other low grades of fever, when all thinking minds would use great care in the treatment and food.

The dryness or moisture of the tongue denotes the extent of the disease of the intestines, and will point us in that direction.

A fissured tongue points to the kidneys, either an inflammation or something wrong with secretion.

Yellow coatings are usually associated with morbid liver and want of biliary secretions, and would indicate mild hepatics and tonics.

Raised papillæ, bright red, denote irritation of ganglionic nerves and irritation of stomach, especially the mucous coating. Shows exhaustion; no digestion, and needs rest; nux vomica twenty drops, and the food to be warm and taken in small quantities. Bismuth and pepsin after food.

Broad, thick tongue, papillæ not visible, but looking raw, denotes a septic condition of blood, and favors typhoid fever. Indicates, if deep red, sulphuric acid; if pale, sulphite soda. Liquid food, sipped warm, in small quantities.

Deep, dark-red tongue and dark coating indicates septic condition of blood.

Shades of dark brown and black denote typhoid condition, or septic conditions.

Pale, dirty fur on tongue denotes acidity and a septic condition of system; indicates sulphite of soda; but if membranes are deep red, sulphuric acid will be admissible, because it would show an alkaline condition of blood.

Contracted, pointed, cannot hold still, and drawn to one side of mouth, denotes a wrong with the nerves, and perhaps the brain. Requires great care and study of condition.

Dry tongue always denotes feverishness or inflammatory condition, a wrong with the nerve centers of ganglia.

Thick tongue, and curved edges upward, denotes atony of the nerve centers of ganglia, requiring stimulants, nux vomica or strychnine and quinine.

Pointed, narrow tongue is the tongue of sluggish condition of digestion and assimilation and congestion, especially of the base of brain. Restlessness and constant change of position are usually present.—*Medical Age.*

MOVABLE KIDNEY.

McNaughton (*Brooklyn Medical Journal*, February, 1898), reviewing the history of movable kidney, states that while the condition has long been recognized, it has as yet received too little consideration at the hands of the profession. The chief symptoms are those of digestive disturbances, pain near the lower border of the ribs, generally to the left of the median line, and nervous manifestations.

The diagnosis of movable kidney is easy in the majority of cases. The patient should be placed on the back, with legs and thighs moderately flexed. The physician then lightly grasps the side just between the lower rib and iliac crest, with thumb in front and the fingers behind. The patient is directed to take a long breath, when the kidney, if loose and not too tightly held, will be felt passing between the fingers and thumb. The parts should then be more firmly grasped, and the kidney palpated with the other hand and made to slip back to its normal position.

Regarding treatment, the author says that ordinary support of the kidney by means of a belt properly adjusted while the patient is on the back is all that is required in the majority of these cases. The amount of pressure necessary to hold a kidney in place is very slight. Means should also be taken to increase the amount of adipose around the kidney.

McNaughton deprecates the frequent resort to surgical interference in these cases, and finds that very often the operation of "anchoring" is not

only unjustifiable, but may leave the patient in a worse condition than previously existed.

In the discussion of this paper, Prof. Chas. Jewett was under the impression that movable kidney had been detected in nearly half of his office patients, that in a good proportion of these the condition had given rise to no symptoms. He considered that operation had been resorted to much oftener than necessary, and had found that lacing the lower portion of the corsets moderately tight, leaving the upper part loose, and suspending the clothing from the shoulders, had frequently afforded sufficient relief without the inconvenience of extra apparatus.—*Medical Age.*

DISCOVERY OF A ROMAN HOSPITAL NEAR ZURICH.

The Zurich correspondent of the *Times* writes: "An ancient Roman hospital has been brought to light at Baden, near Zurich, the discovery having been made in connection with recent excavations at Windisch, the Roman Vindonissa. At Vindonissa the two great Roman roads met, the one leading from the Great St. Bernard along Lake Leman and then by Aventicum and Vindonissa to the Roman stations on the Rhine; the other leading from Italy to Lake Constance by the Rhætian Alps, the canton which is now Winterthur, Baden, and Windisch. The last point was the station of the seventh and eighth legions, and close by the Roman road the hospital has been discovered. It contains fourteen rooms supplied with many kinds of medical, pharmaceutical, and surgical apparatus, the latter including probes, tubes, pincers, cauterizing instruments, and even a collection of safety pins used in bandaging wounds. There are also medicine spoons in bone and silvering measuring vessels, jars, and pots for ointment, some still containing traces of the ointment used. The excavations have also revealed a large number of silver and copper coins, the former belonging to the reigns of Vespasian and Hadrian, and the latter bearing the effigies of Claudius, Nero, and Domitian."—*English Exchange.*

IMPETIGO CONTAGIOSA.

The following method of treatment has yielded uniform good results in the dermatological clinic of the Montreal General Hospital during the last ten years or more.

The crusts of dried pus and serous exudation are picked off the patches of impetigo (in some cases it is necessary to soften them previously with a little sweet oil) and an ointment of the ammonio-chloride of mercury applied directly to the raw surface.

The strength of the ointment varies from the pure unguentum hydrargyrum ammoniatum (B. Ph.) to equal parts of this and unguentum simplex, the latter being used for very young children.

That this preparation of mercury can be used without the slightest danger of causing irritation has been abundantly proved by a long experience of a large number of cases, and that it is also a specific in this

disease the records of the hospital show, as with few exceptions a week or ten days effects a complete cure

F. J. SHEPHERD, *in Montreal Medical Journal.*

METHYLENE-BLUE.

Methylene-blue has a very pronounced action upon the course of albuminuria. It diminishes the daily amount rapidly, and finally causes it to disappear from the urine. It seems to me to be an undeniable clinical fact.

Upon eight patients submitted to this treatment, in five I observed rapid diminution, and in three disappearance of albumen.

These patients had either acute nephritis or interstitial nephritis, complicated or not with renal congestion. In the patients upon whom this test was made great increase of urea were noted. It seems, therefore, that methylane-blue at once is a diuretic and a modifier of the functions of the kidney.

The daily dose of methylene-blue is 0.25 0.5 centigrams. Its use has no bad effects, provided it contains no impurities, otherwise it causes a slight cystitis.

Abundant drinks and the use of nutmeg for the rest will prevent the occurrence of this condition.—Lemoine, *Compt. Rend. Societe de Biologie*, May, 1897.

The *Medical World* of Philadelphia has been printing a series of formulæ of well known panaceas, and in so doing has, we think, been rendering the profession a distinct service. We are glad to reprint some of them, with the editorial note with which the editor prefaces them :

" In our issue for last November, we began republishing the formulas for the leading advertised nostrums. We do this believing that physicians have a right to know what the people are taking, and that they *ought* to know in order to administer proper antidotes if called in case of an overdose, which often happens, particularly with the various soothing syrups given to children. Back numbers can still be furnished to those who wish the series complete."

PIERCE'S GOLDEN MEDICAL DISCOVERY.

Take of—

Fluid extract of cinchona	16 oz.
Fluid extract of columbo	4 oz.
Fluid extract of guaiacum	8 oz.
Fluid extract of licorice	4 oz.
Tincture of opium	1 oz.
Podophyllin (resinoid)	120 gr.
Glycerine	6 fl. pt.
Alcohol	Sufficient.

Dissolve the podophyllin in the alcohol, and add the rest of the ingredients.

Mix them. Dose:—A teaspoonful.

—*The Drug Mill.*

PIERCE'S FAVORITE PRESCRIPTION.

Take of—

Savin	150 gr.
Cinchona	150 gr.
Agaric	75 gr.
Cinnamon	75 gr.
Water sufficient to make a decoction of	8 fl. oz.

To this add—

Acacia	150 gr.
Sugar	75. gr.
Tinct. digitalis	½ fl. dr.
Opium	½ fl. dr.
Oil anise	8 drops.

Dissolve the gum and sugar in the strained decoction, then add—

Alcohol, 2 fluid ounces, in which the oil has previously been dissolved.

—*Western Druggist*, from Hager.

WARNER'S SAFE CURE.

In Germany each maker of patents must furnish the Government with the formula for the patent he makes. This is the one furnished by Warner for "Safe Kidney and Liver Cure."

Each bottle contains:

Ext. of lycopus Virg. (the herb)	308 gr.
Ext. of hepatica (the herb)	232 gr.
Ext. of Gaultheria	7½ gr.
Potassium nitrate	39 gr.
Alcohol (90 deg.)	2½ oz.
Glycerine	10 dr.

Water sufficient to make one pint

—*Formulary and Druggists' Magazine.*

"BIG G" INJECTION.

A correspondent sends the following, which he says yields a preparation almost identical in appearance and effect:

Berberine hydrochlorate	15 gr.
Zinc acetate	15 gr.
Glycerine	4 dr.
Water to make	8 oz.

Mix. —*Druggists' Circular.*

URÆMIC HEADACHE.

Potassium citrate	2 drs.
Spirit juniper	6 fl. drs.
Spirit nitrous ether	2 fl. drs.
Infusion broom	6 fl. ozs.

Wineglassful three times a day.—*Phila. Med. Journal.*

ANTI-HYSTERIA PILLS.

Arsenious acid	½ gr.
Ferrous sulphate	20 grs.
Extract sumbul	20 grs.
Asafetida	40 grs.

Make into twenty pills. One three times a day, after meals.—*Phila. Med. Journal.*

NERVINE TONIC.

Asafetida	1 dr.
Arsenious acid	½ gr.
Strychnine sulphate	½ gr.
Extract sumbul	30 grs.
Ferric oxide (Brown)	40 grs.
Quinine valerianate	20 grs.

Dispense in twenty-four capsules. One capsule after each meal.—*Phila. Med. World.*

CASTORIA.

The following formula, from the *Indiana Pharmacist*, is given as approximating this preparation:

Take of—

Senna	4 dr.
Manna	1 oz.
Rochelle salts	1 oz.
Fennel, bruised	1½ dr.
Boiling water	8 fl. oz.
Sugar	8 oz.
Oil of wintergreen	Sufficient.

Pour the water on the ingredients. Cover and macerate until cool; strain and add the sugar, dissolve by agitation, and add oil of wintergreen to flavor.

GARFIELD TEA.

Our examination showed it to contain chiefly senna leaves and crushed couch-grass. There are perhaps small amounts of other drugs present; but if so, they are relatively of little importance.

—*New Idea.*

AN OINTMENT FOR ACUTE ARTICULAR RHEUMATISM.—Lemoine (*Nord medical; Tribune medicale*, February 9th), gives the following among other formulæ:

R	Vaseline	25 parts.
	Salicylic acid	4 "
	Sodium salicylate	3 "
	Extract of belladonna	1 part.

M. To be applied and covered with cotton.

—*New York Medical Journal.*

SYP. HYPOPHOS. CO., FELLOWS

CONTAINS

The Essential Elements of the Animal Organization—Potash and Lime ;

The Oxidizing Elements—Iron and Maganese ;

The Tonics—Quinine and Strychnine ;

And the Vitalizing Constituent—Phosphorus ; the whole combined in the form of a Syrup, with a slight **alkaline reaction.**

It differs in its effects from all Analogous Preparations : and it possessee the important properties of being pleasant to the taste, easily borns by the stomach, and harmless under prolonged use.

It has gained a Wide Reputation, particularly in the treatment of Pulmonary Tuberculosis, Chronic Bronchitis, and other affections of the respiratory organs. It has also been employed with much success in various nervous and debilitating diseases.

Its Curative Power is largely attributable to its stimulant, tonic and nutritive properties, by means of which the energy of the system is recruited.

Its Action is Prompt : It stimulates the appetite and the digestion ; it promotes assimilation, and it enters directly into the circulation with the food products.

The prescribed dose produces a feeling of buoyancy and removes depression and melancholy ; *hence the preparation is of great value in the treatment of nervous and mental affections.* From the fact, also, that it exerts a double tonic influence, and induces a healthy flow of secretions, its use is indicated in a wide range of diseases.

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PUBLISHERS' DEPARTMENT.

SOMATOSE AND IRON SOMATOSE.

(Analytical Reports, Edinburgh Medical Journal, May, 1898.)

Bayer & Co., of Elberfeld, Germany, have forwarded samples of these well-known preparations, which have caused a very considerable amount of interest among German scientists. Somatose is a remarkably pure albumose isolated from the products of the digestion of meat, in the form of a very fine, almost impalpable, yellow-white powder, extremely soluble in water. In solution it has a pleasant flavor, and gives no precipitate.

	Analysis, Per Cent.
Water	10.32
Total solids	89.64
Ash	7.56
Organic solids	82 08
Nitrogen	13.1
Albumose corresponding to nitrogen	81.8
Organic remainder	0.28

On investigation, the albumose was found to be largely secondary in character, *i e.*, deutero-albumose, and therefore very nearly akin to pure peptones. The amount of Somatose available did not permit of any practical dietetic experiments on it, but reference to Klemperer *(Berl. klin. Wchnschr.*, 28th June, 1897), Bernstein *(ibid.*, 22nd Feb., 1897), and Salkowski *(Deutsche med. Wchnschr.*, Leipzig, 1897, No. 15), shows that the ingestion of Somatose, to the exclusion of all other food, cannot be continued without bringing on diarrhœa; as an adjunct to other food, in teaspoonfuls three or four times a day, it not only acts as a food itself, but as a gastric stimulant and sedative at the same time, owing to its ready digestion and its combination with the acids in the stomach. The Iron Somatose is a similar preparation, containing 2 per cent. of iron in organic combination, and is especially fitted for the treatment of anæmic and chlorotic cases, in doses of 80 grs. twice or 60 grs. thrice daily. There is no doubt that these preparations would be extremely beneficial, in small amounts, during convalescence from enteric fever, pneumonia, etc. They can be, with advantage, given dissolved in milk.

SANMETTO IN URETHRAL AND BLADDER DISEASES—IN PRE-SENILITY AND ENLARGED PROSTATE.—In nearly thirty years' practice I have never written to the proprietors of any medicine extolling its virtues, but after some years constant use of Sanmetto I can but say it is my sheet anchor in all urethral and bladder diseases. In pre-senility it has no equal. Have recently used it in two cases of enlarged prostate, with marked benefit in both cases.

Berkeley Springs, W. Va. GEORGE E. GILPIN, M.D.

THE BEHRING ANTITOXINE PATENT.—We understand that Parke, Davis & Company have decided to fight the patent recently granted to Behring, and have for that purpose retained the services of Betts, Betts, Sheffield & Betts, the well-known patent attorneys. We think they are to be commended for doing so, inasmuch as we regard that patent as a seriously threatening precedent to American pharmaceutical enterprise, besides being unjust and unfair to others, detrimental to the interests of humanity at large, and a blot upon the dignity and honor of the escutcheon of medicine. We would suggest that Messrs. Parke, Davis & Company should make it a public matter by inviting all the established firms that manufacture anti-toxine to join with them in the attack; and we have little doubt that they will have the hearty commendation and support of the medical profession and the medical press throughout the United States and Canada.

GOVERNOR OGILVIE'S OUTFIT.—The newly-appointed governor of the Yukon, Mr. Ogilvie, who will shortly leave for Dawson City to assume his duties, is now busy equipping himself for the rigors of that extremely cold climate. In the place of blankets he and his party are taking eiderdown sleeping bags and eiderdown quilts made of strong canvass on the outside and lined with a pure natural wool. By an ingenious device the down interlinings are arranged in such a way that when the bag is in use every seam is protected by a layer of down, either inside or outside, and therefore provides absolute immunity from even the lowest temperature. The bag is waterproof and windproof and its weight is about that of two pairs of blankets.

(Weight is an item of considerable importance in an arctic outfit.) The bags and the quilts are made by the Alaska Feather & Down Co., the well-known makers of high class bedding and down goods, in Montreal.

The Seventeenth Annual Announcement of the New York Post-Graduate Medical School and Hospital, University of the State of New York, for 1898-99, has just been issued. It shows that 523 Practitioners of Medicine have attended its courses during the past year. They came from the various States of the Union and the Dominion of Canada. There were ten physicians from foreign countries, two of these being from India and one from Japan. Only 96 were from the State of New York.

BRAND & COMPANY, LIMITED.—Messrs. Brand & Co., Limited, of London, England, with commendable enterprise, are making a large and handsome exhibit of their well-known specialties for invalids at the Industrial Exposition. It goes without saying that all visiting physicians will be made most welcome, and those in charge will be happy to give all information desired regarding these famous products.

The Canada Lancet.

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ORIGINAL ARTICLES AND COMMUNICATIONS.

VICARIOUS URINATION (?)

A Paper read before the Ontario Medical Association, June, 1898, by A. T. Rice, M.D., Woodstock, Ont.

MR. PRESIDENT AND GENTLEMEN:

The case the history of which I wish to bring before you to-day is of such an unique character that, for a better name, I have appended to it that of Vicarious Urination.

I trust that subsequent discussion by the members present will help to solve what to myself, and other medical gentlemen who saw the case, was somewhat of a mystery.

The patient, æt. 30, daughter of a farmer, of a somewhat nervous temperament and rather weak intellect, was attacked about three years ago with cystitis of two or three weeks' duration, the attack being somewhat severe, there being complete atony of the bladder, necessitating the use of the catheter during that period. This attack gradually subsided, though considerable tenderness remained, lasting even up to the present time.

One year after this attack she was again laid up with what this time took the form of involuntary twitchings or spasms of the whole body, emanating from the dorsal region, over which portion of the spine there was a good deal of tenderness. These spasms were so severe as to confine her to bed for some weeks.

Accompanying this attack there were a number of discolorations of the right leg and thigh, extending almost entirely over the limb, but without tenderness. This after a few weeks gradually disappeared, and the patient regained her ordinary health.

About one year ago the atony of the bladder returned and the patient was again obliged to resort to the use of the catheter three times a day, about half an ounce being drawn each time. During this time her general health suffered severely, the bowels being extremely constipated, appetite poor, mucous patches in the mouth and breath foul. No amount of treatment seemed to have the slightest effect upon these abnormal conditions. The twitchings or spasms also returned and continued throughout.

About the first of August the feet began to swell slightly, though not sufficiently to incommode her to any extent. At this time a peculiar complication set in, and the main one to which I wish to call your attention.

The secretion of the bladder gradually diminished, but was compensated for by an exudation of fluid from the anterior portions of the lower limbs between the knee and ankle. This fluid was voided regularly three times a day, the amount gradually increasing, the average being about thirty to forty ounces per day. The fluid simply oozed from the skin without any abrasion of the skin or discoloration, or even the slightest œdema being present. The patient would realize that the fluid was about to issue and would place her feet upon a stool and a dish beneath the heels.

I happened to be present at one time when it began, and can therefore vouch for the correctness of the statement.

The fluid was of an amber color, similar to healthy urine, Sfp. gr. 1010, an absence of albumen or sugar, had a strong smell of urine upon boiling, with a distinct ammoniacal smell after standing; examination also showed the presence of uric acid.

After this symptom showed itself the patient's health rapidly improved and became fairly well established, so that she had little to complain of except the inconvenience caused by this peculiar phenomenon.

From my note-book I have taken the following data:

Sept. 31st, 1897—The patient passed three quarts to-day by measurement.

Sept. 23rd—Patient passed seventy ounces this morning at one sitting.

This condition lasted until October 3rd, when the patient passed one gallon in half an hour in the morning, followed by one pint at 11 a.m., when it suddenly ceased altogether and began to pass through the urethra first in small quantities every few minutes, followed by five to six quarts the first night. After this the natural condition gradually became established, but the patient became again very ill; the spasms re-appeared, accompanied by headache, swelling of feet and great swelling of the face.

This condition remained for about a week, when the symptoms gradually disappeared, and the patient regained her usual health, which has continued until the present time.

I might say that during the last two weeks, when the flow was excessive from the shins, the bladder remained quite empty, and the use of the catheter was stopped, as no urine could be obtained at any time.

Question—What was this? Was it Vicarious Urination? If so, how is it to be explained? Through what channel did it travel? What the pathological condition?

The fluid certainly stood all the tests for urine, resembled urine, and its elimination from the system through this peculiar channel permitted the patient to live.

Dr. Mearns saw the patient, in consultation with me, and I have explained the case to a number of gentlemen, but all are equally at sea with myself.

I wrote a history of the case to Prof. Guiteras, Genito-Urinary Surgeon of New York Post Graduate School, who took a great interest in the case, but stated that he had never heard of such a case.

The only case bearing any resemblance to this was one that occurred in the practice of Dr. Clement, of Woodstock.

This occurred in an old lady, in which each winter for six years the secretion of the bladder stopped, and all of the urine exuded through the skin in the form of perspiration; the patient died after the sixth year.

The foregoing is a plain statement of what to me was a unique case, which baffled me from first to last, both as to diagnosis and treatment, and I hope that in the discussion to follow some gentleman may be able to throw light upon a peculiar phenomenon; or will we be obliged to admit that some of the vagaries of the human system are past our finding out?

COIN IN LARYNX—TRACHEOTOMY—RECOVERY.

BY D. J. GIBB WISHART, B.A., M.D.C.M., L.R.C.P.L.

Professor of Laryngology, etc., Ontario Medical College for Women; Lecturer in Laryngology and Rhinology, Trinity Medical College; Rhinologist and Laryngologist, Hospital for Sick Children, St. Michael's Hospital, the Girl's home, and Toronto General Hospital.

P. M., foundryman, aged 40, was holding a ten cent silver piece of money between his teeth, and suddenly drew it into his larynx. Had a sensation of pain referred to the thyroid cartilage, and also a fear of smothering, which was increased by lying on his back. The patient was seen by me 18 hours after the accident. There was no weakness nor dysponœa. On examination the coin could be seen lying on the vocal cords and in the same plane, covering their anterior half, and held in place by the swollen ventricular bands above. The larynx was somewhat irritable and congested from previous attempts at removal. As the coin was lying at right angles to the blade of the laryngeal forceps, and the ventricular bands almost covered the coin, any attempts at removal were ineffectual. So, too, was suspension with head down, and pressure upon the sides of the thyroid plates. I determined to open the trachea through the two upper rings, and to use a local anæsthetic only. About 3 ℥ of Schleich's solution were injected in the loose cellular tissue over the thyroid and for 3ii below. The trachea was opened without serious discomfort to the patient. Sutures were passed through its walls on either side and the incision kept gaping. A small laryngeal mirror was introduced into the opening and the coin found still resting in the same place. To give more room I then incised the cricoid cartilage in the line of the skin incision, but left the crico-thyroid membrane intact. An acutely curved pair of forceps was then introduced and the coin removed successfully. The edges of the tracheal wound were drawn together with a catgut suture, but the other parts were left open, and a dry dressing applied. Patient made an uninterrupted recovery, and was at work in a week. The voice when he was discharged was almost entirely normal.

INSECT BITES.—Ottinger recommends, for insect bites accompanied by violent inflammatory symptoms, ichthyol, to be applied pure with a camel's hair pencil, or in the form of a 10 per cent. gutta percha plaster. Its action is rapid and remarkable, and may be explained by the power of ichthyol to constrict the blood-vessels.

PEACH STONE IN OESOPHAGUS—PERFORATION—DEATH.

BY D. J. GIBB WISHART, B.A. M.D.C.M., L.R.C.P.L.

Professor of Laryngology, etc., Ontario Medical College for Women; Lecturer in Laryngology and Rhinology, Trinity Medical College; Rhinologist and Laryngologist, Hospital for Sick Children, St. Michael's Hospital, the Girl's Home, and Toronto General Hospital.

Mrs. D., aged 76, brought to the Toronto General Hospital, Aug. 20th, with a history of having swallowed a peach stone one week previously. There had been constant pain referred to the left side of the neck, and inability to swallow until the previous day, when she succeeded in getting down a cup of milk. Patient was weak from want of food. An olive-shaped probang was passed to a point 7 in. from the incisor teeth, but would not go further. A coin catcher, however, was passed beyond the stricture, and on its return caught, causing pain, which made the patient suddenly seize it and pull it violently out. No bleeding followed. The coin catcher brought with it a piece of ill-smelling membrane, which appeared microscopically to be granulation tissue. The temperature rose that night to 101⅘, but a little milk was swallowed. Pain was complained of in the right shoulder and across the right hypochondriac region.

The following afternoon, under ether, another attempt was made to locate the stone, but no probang could be passed further than 7½ inches from the incisor teeth. A consultation followed and the patient was handed over to the surgeon, Dr. Bingham, who kindly operated, assisted by Drs. Nevitt and Bruce. An incision was made parallel with the anterior border of the sterno-mastoid muscle for about 3 in., exposing the omo-hyoid at the upper end of the opening. In separating between the carotid sheath and the tracheal coverings a quantity of foul-smelling pus welled up and a probe discovered the stone lying point downwards in the same line, outside the trachea. The stone when removed measured 1½ in. long and 1⅛ in. broad. The wound was dressed without further search or irrigation. The patient was fed per rectum, and proceeded well, without further rise of temperature, but with several distinct rigors till the 5th day when she rejected the food per rectum, and the following day became comatose, dying on the 7th day after the operation. No post-mortem was obtained. In this case the sharp point of the stone was the probable cause of the unfortunate result, it having pierced the mucous membrane and having been driven further on by the spasmodic action of the constrictor muscles. The age of the patient, the long period of fasting, and the delay in entering the hospital, all contributed to the unsuccessful result.

MERCIER: THE CHOICE OF FLUID FOR ENTEROCLYSIS IN THE NEWLY-BORN. (*Thèse de Paris, 1897.*)—Enteroclysis constitutes a rational method of treating intestinal disturbances in infants, and has also proved an efficacious one. In the case of newly-born babies, half a litre of fluid should be injected at a time. Boiled water, borated water, or physiological salt solution may be used. Should the stools be very fetid, a saturated solulution of naphthol is valuable. Finally, if the large intestine is in an inflammatory condition, especially the lower portion, enteroclysis with starch water is indicated.—*Arch. of Pediatrics, June, 1898.*

THE TREATMENT OF CLUBFOOT.

CLARENCE L. STARR, M.D.,
Orthopedic Surgeon to the Hospital for Sick Children; Assistant Demonstrator of Anatomy, University of Toronto.

The ordinarily accepted meaning of the term clubfoot is the condition of talipes equino-varus, in which the sole is inverted, the anterior portion of the foot displaced inwards and the heel elevated; and it is to the treatment of this condition that the writer desires to call special attention.

Before the treatment can be intelligently considered it is necessary to have pictured in the mind the pathological condition which exists in these cases.

The inner side of the foot is markedly concave and shortened, from the inward displacement of the anterior portion of the foot from the mid-tarsal joint. The outer side of the foot is abnormally convex. All the bones of the tarsus are altered in shape and position.

The astragalus is pressed forward and rotated on its horizontal axis, so that only the posterior part of the superior articular surface articulates with the inferior surface of the lower end of the tibia, the anterior part presenting a marked prominence under the skin on the dorsum of the foot. The neck is directed obliquely inward, and the surface for articulation with the scaphoid looks inward instead of forward. It is interesting to note in this connection that Parker and Shattuck, in the *British Medical Journal* of May 24th, 1884, call attention to the fact that in anthropoid apes an inward obliquity of the neck of the astragalus exists, but these are never clubfooted.

While this is true, it should be noted that the articular facet for the scaphoid is directed forward and not inward, and the only result is a broadening of the tarsus. In the anthropoid apes also the great toe is prehensile and is not placed parallel to the rest of the toes.

Bradford and Lovett also call attention to a marked divergence of the great toe, similar, though to a less marked degree, to that seen in the anthropoid apes, reported by travellers to be characteristic of the pure natives of Annam. No dissection of the feet of this race is reported, and the inclination of the axis of the neck of the astragalus is not known.

The os calcis is rotated on its vertical axis, so that the anterior extremity is directed somewhat outwards and the posterior inwards. The anterior end is also depressed, so that the bone assumes more of the vertical than the horizontal direction.

The cuboid maintains its connection with the os calcis and on account of the inversion of the foot becomes the lowest bone of the tarsus.

The scaphoid is displaced inwards and carries with it the three cuneiform bones which are intimately connected with it.

The metatarsal bones follow the cuneiform and cuboid bones inward and may be placed at an acute angle to the axis of the leg.

All the tendons on the dorsum of the foot are placed internal to their normal position, and the ligaments on the inner and plantar surface are shortened, as is also the tendo Achillis.

Viewing a dissected clubfoot, it is easily seen that, aside from the shortened ligamentous bands, the inward obliquity of the neck of the astragalous and the protruding anterior end of the os calcis are the chief hindrances to reposition.

The simplest method by which the deformity can be corrected and maintained in the correct position should in all cases be adopted, and when once started the operator should not be satisfied until the deformity can be *over-corrected.*

The treatment necessarily varies with the age of the patient and the severity of the deformity.

Manual force. In infants, when the bones are, for the most part, cartilaginous, the deformity can usually be corrected by manual force. In very mild degrees of deformity the simple replacing of the foot in the normal position by the mother, a number of times a day, say while nursing the child, will often be sufficient to correct the deformity. In severe forms the foot may be replaced as far as possible, with or without an anæsthetic, and a retention bandage of plaster of Paris applied. This if changed once or twice each week, and the foot further corrected each time, will result in cure.

A number of appliances have been devised for forcible reposition of the deformed foot, such as the Thomas wrench, Morton's osteoclast, and others, but the writer prefers the use of the hands, as the force can be better regulated, and there is no danger of abrasions or contusions of the skin.

Mechanical appliances.—Various shoes and other forms of apparatus have from time to time been advocated to correct the deformity of clubfoot; but probably the only apparatus of any value is a clubfoot shoe modelled after the pattern of the Taylor shoe

This consists of a steel sole plate, cut to fit the outline of the sole, with the inner edge turned up to grasp the inner side of the great toe, a hard leather heel cup, and a single outside upright of steel placed at right angles to the sole plate, extending to the calf. The foot is strapped to the plate by a strapping, somewhat after the style of the sandal strapping, and the foot being inverted, this will throw the upright out about five or six inches from the leg. The upright is now used as a lever and brought close up to the leg and buckled around the calf. Of course this method of treatment requires patience and constant care on the part of the surgeon and parents, and, at best, the progress is slow.

Other forms of apparatus such as those made with key and ratchet arrangement, and those with elastic traction, are cumbersome and not satisfactory in the hands of any but those by whom they were devised.

The ordinary apparatus sold by instrument makers is complicated, easily thrown out of order, and should be entirely discarded for simpler forms.

Operative procedure: Tenotomy.—The mildest operation is that of tenotomy and division of the plantar fascia In older patients it is usually necessary to divide the plantar fascia and tendo Achillis, as well as sometimes the tibialis anticus tendon and the internal lateral ligaments of the ankle joint. The plantar fascia should be divided first so as to get the counter traction of the tendo Achillis in forcibly correcting the varus.

The division of the tendo Achillis may be left for a future operation if the varus is not entirely overcome. By the use of an Adams fascia knife a very small opening is made in the skin and the tendons divided subcutaneously. After free division of these restricting bands the foot can generally be brought around by manual force and retained by means of plaster of Paris bandage.

In the so-called inveterate clubfoot, when all these mild methods fail, a more radical operation is necessary, and a great many operations are described to meet the need, but only three will be here considered.

Phelps operation.—This is a free, open incision of all resisting bands in the sole of the foot. An incision is made from the inner malleolus down to the inner side of the neck of the astragalus. This yields good results very often, although there is danger of paralysis of the anterior portion of the foot from division of the internal plantar nerve. However, owing to the alteration in the shape of the bones, the division of the soft parts is often not sufficient to correct the severer grades of deformity.

Osteotomy of the neck of the astragalus, and possibly, at the same time, of the anterior end of the os calcis, will be necessary when marked obliquity of the neck is found. The division of the neck may be done from the inside after an open incision has been done. The bottom of the wound will be found to be the scaphoid, if the line of incision is made as described above, which is nearly parallel to the tendon of the tibialis anticus. If the foot is carried round as far as possible the scaphoid moves forward and uncovers the neck of the astragalus, which may be cut nearly through with the osteotome and fractured. If open incision is not done the neck of the astragalus may be divided from the outside, by cutting down on the prominent upper surface of the bone, between the tendon of the peroneus brevis and the tendon of the long extensor to the toes. The osteotome can be easily placed on the neck and section made. If after this the correction is hindered by the anterior end of the os calcis, this may be divided or a wedge-shaped piece taken out, when the foot may be over-corrected and a plaster of Paris bandage applied.

Astragalectomy.—This should only be resorted to when all milder measures have been faithfully tried and have failed. It is chiefly called for in those intractable cases where the astragalus is more than usually depressed and turned inward, where the foot cannot be brought to a right angle.

The operation is best done by making an incision, about two inches long, over the prominent outer surface of the foot, between the tendons of the peroneus tertius and brevis and down to the bone. The ankle joint and the astragalo-scaphoid joint should be first opened into, to map out the bone distinctly. Next the external lateral ligaments should be divided and the interosseous ligaments between os calcis and astragalus. The hardest part of the operation is the division of the internal lateral ligaments, and this is best done by grasping the bone with lion forceps and introducing a pair of curved scissors above, pulling and snipping the ligamentous bands as they appear.

The wound should be closed with sutures in the usual way and a dressing applied which may remain until the wound is entirely healed.

Whatever method of reduction of the deformity may be employed, it is absolutely necessary that a retention shoe, such as the Taylor shoe, should be worn, night and day, for a period of from nine months to a year, to prevent relapse.

To summarize, it may be stated that in the treatment of clubfoot the mildest measures possible to over-correct the deformity should be used. The operator should not be satisfied until the deformity is over-corrected. A retention apparatus should be worn sufficiently long to prevent any possibility of relapse.

The Physiognomy of Disease.—In an article on the diagnosis of disease in infants and children in Practical Medicine, Dr. E. D. Chesebro says that in early life the physiognomy of disease constitutes one of the most important elements in diagnosis. As Finlayson says, "In almost every serious disease of early infancy and childhood it is possible, by studying carefully the relations of the spontaneous movements to each other, and to the attitude and expression of the child, its cries, smiles, inarticulate noises, its color, state of general nutrition, behavior in sleep and in waking, to arrive at a reasonable and often perfectly just conclusion as to the general nature and locality of the disease." To utilize to its fullest extent this element in diagnosis an examination of the naked body must be made. Comparatively little information can be obtained from looking at a child's face and a bundle of clothes.—*Arch. of Ped., April, '98.*

V. Urticaria.—For external application to abate the itching, a solution of alcohol in water may be employed, to which carbolic acid, salicylic acid or menthol may be added. For the itching, the following may be used:

℞ Lact. sulf. .....
Resorcini .....aa 5.0 (1¼ drams)
Axungiæ porci .....50.0 (1⅔ ounces)

In place of resorcin, cade oil may be prescribed, or

℞ Acid carbolici .....
Acid salicylic .....aa 0.20, 0.30 (3 to 5 grains)
Menthol pulv .....0.50 (7¾ grains)
Axungiæ porci .....50.0 (1⅔ ounces)

Internally, the patient receives a laxative for cleaning out the stomach and the intestinal canal.

Chloride of lime is said to be absorbed by the blood, and there to neutralize the toxines, which reflexly cause the nettlerash on the skin. It is prescribed in two-grain doses.—*Schwimmer.*

MEDICINE.

IN CHARGE OF

N. A. POWELL, M.D.,

Professor of Medical Jurisprudence and Lecturer on Clinical Surgery, Trinity Medical College; Surgeon to the Hospital for Sick Children, and to the Extern Department Toronto General Hospital; Professor of Surgery, Ontario Medical College for Women. 167 College St.; and

WILLIAM BRITTON, M.D., 17 Isabella Street.

TRAUMA A CAUSE OF APPENDICITIS.

BY WILLIAM B. SMALL, M.D., LEWISTON, ME.,

Attending Physician, Central Maine General Hospital.

On every hand we hear the query, "Why is there so much more appendicitis to-day than ever before?" Answers to this query are not very satisfactory. The medical profession takes credit to itself, and says, "We are much better able to make the diagnosis." But this hardly explains the half of the increase. It would take many times all the cases of peritonitis, perityphlitis, and paratyphlitis of twenty years ago to equal in number the cases of appendicitis of to-day. To find a satisfactory explanation of this increase in all its phases we must study more carefully the causes which lead to the inflammatory involvment of the appendix. In this way alone can the true solution of the question be reached.

The idea is gaining ground that the appendix is anatomically a glandular organ. Among foreign writers, especially, it seems to be considered somewhat analogous to the tonsils. Its disorders then would be like those of the tonsillar bodies—follicular, mucous, submucous, infectious, exudative, and ulcerative. To continue the analogy, it is doubtless a fact that, as in the tonsils, the local inflammation of the appendix is caused by micro-organisms, specific or non-specific.

It has been demonstrated that the particular cause of the inflammatory process in the appendix is the bacillus coli communis, though in a certain proportion of cases other micro-organisms, especially the staphylococcus pyogenes and streptococcus are also found.

These germs may gain admittance to the appendix in the intestinal fluids, or more frequently with irritating fæcal matter in hard egg-shaped concretions of various sizes, introduced into the appendix from the cæcum by force of pressure. Foreign bodies (cherry stones, orange seeds, spicules of bone) are more rarely found in the lumen of the appendix, but all come from the same source (the cæcum) and in the same way, by being forced in. The irritation of the mucous membrane by these hard substances furnishes a foothold for the bacilli—staphylococci and streptococci—to multiply and perform their destructive work.

Why this condition should occur so much more frequently during recent years is not uniformly explained. We are told by some observers that the valve over the end of the appendix is defective. The existence of this valve is not universally admitted, much less its defective condition.

Some assert that the existence of intestinal catarrhal conditions in connection with the grippe is responsible for the large increase of appendicitis in the past few years. This point seems to be proved from figures quoted by Goluboff, who states that in Moscow, during the spring, summer, and autumn of 1896, the number of cases increased to four or five times the average of the past ten years.

While this explanation seems the most satisfactory one that has come to my notice as far as the general increased prevalence of the disease is concerned, there is another point in this connection which demands further attention.

All who have studied the disease agree that the majority of cases are found in young adult males, a majority so large that they furnish seventy-five to eighty per cent. of all cases. About seventy-five per cent. of all patients are under thirty years of age. These figures are significant. Occurring in other diseases, surgical or medical, we have been taught to explain such prevalence by the fact of greater liability to the predisposing cause or more frequent exposure to the exciting cause. Clinical observation and experience show this theory to be well sustained. Does it apply as well to appendicitis?

The fact that some part of the contents of the bowel nearly always furnishes the exciting cause of appendicitis makes it but logical to seek the explanation why this material should be forced from the colon into the appendix. It is reasonable to suppose that muscular contraction will produce this result. But why should the cæcum undergo such contractions more often in the male than in the female? I believe there is a sufficient explanation behind all this. I believe the true cause of the greater percentage of occurrence in young men is found in their more frequent exposure to accidental injuries and strains, and to the strong contractions of the abdominal muscles necessary in their work, thus, in either case, producing great pressure on the contents of the bowels; of this compression the cæcum receives its full share, being on the right, and usually more active side of the body. This result is but natural, and is in accordance with the principle I have stated, which is well recognized in other medical and surgical subjects.

That such a cause is sometimes hard to trace is but a natural result from the time required for the production of local inflammation from the concretion, and for the development of the germs in sufficient quantity to produce an effect so great as to be recognized by symptoms. This interval will be apparent to you as you listen to the cases I will report.

In the literature of appendicitis traumatism is mentioned as an infrequent cause. I have been able to find but one case reported with this the only cause. This case was that of a boy of sixteen years, who was struck in the right iliac region by the handle of a push-cart. A distinct tumor in that region occurred; the tenderness was most acute over McBurney's point. The tip of the appendix was found gangrenous. This

case was reported by Dr. W. S. Coley in the *Medical Record* of February 15, 1896.

Much like this, however, is a case reported in the *New York Medical Journal* of October 24, 1896, by Dr. D. C. Moriarta, in which a pin was found in the appendix, having been there a year without producing trouble, until inflammation was lighted up by a blow.

Rutherford Morrison, in the *Edinburgh Medical Journal*, March, April, and May, 1897, concludes that a strain may apparently originate an attack, a point which he considers of medico-legal importance.

My attention was first called to traumatism as a cause of appendicitis in the autumn of 1894, when I was called to see a young man unmistakably suffering from appendicitis. Two days before, while attempting to pry up a heavy stone by bringing his weight down on an iron bar while holding it between his thighs with his hands, he lost his hold and the bar struck him a heavy blow in the right iliac region. During the two weeks following he passed through the usual phases of an attack of appendicitis, with tenderness at McBurney's point, large, plainly defined tumor in the right iliac region, etc. He recovered without operation and has had no second attack.

The second case that was plainly of such origin was that of a boy, nine years old. This case occurred in November, 1896. I saw the boy very early in the attack, but could not get from him any history of injury till my second or third visit, when he admitted that the pain first came on while he was playing and pushing a heavy two-horse dump cart by the tongue. The cart was hard to move, so he put the end of the cart tongue against his "belly," his hands farther up toward the cart, and pushed "hard." This occurred about twenty-four hours before my first visit. The abdomen was opened on the fifth day and a quantity of pus found The appendix sloughed away. The child recovered fully.

The third instance of traumatic origin was in a young man, a carpenter. This occurred in June, 1897. In lifting boards from a pile and handing them up to a man above him on the second-floor staging, in order to expedite matters he used his groin as a fulcrum, applying the power by taking hold with his hands, two feet or so from the end in his groin, and lifting. This brought a great pressure across his bowels upward and toward his backbone. In less than forty-eight hours the symptoms of appendicitis began. The course of the disease was typical, and fair recovery was made without operation.

This patient fell under my care because his own physician was ill and unable to attend him. Some three months later a second attack occurred under the care of that physician, by whom appendectomy was promptly performed. The genuineness of the first attack was then proved in the thickening of the omentum and the adhesions of the neighboring parts. Pus was also found. His recovery was rapid and uninterrupted by any adverse symptoms.

I have reported to you those cases which have come under my own care in which traumatism as a cause was plain. Several others in this vicinity have come to my knowledge, histories of some of which I will outline.

Dr. J. A. Donovan, of Lewiston, has given me the details of a case of appendicitis occurring several years ago, in which a boy, about ten years of age, was thrown down and one of his playmates jumped on his abdomen. The immediate pain was great, but soon subsided sufficiently for him to get home. Three days later the doctor was called and found a tumor in the central pelvic region, which was opened through the rectum. Pus and two enteroliths escaped, the cavity was washed and drained, and the boy recovered.

Dr. John Sturgis, of Auburn, relates a case in a boy of eleven years, who was kicked in the abdomen by a horse on Wednesday or Thursday. On the following Sunday appendicitis developed. The abdomen was opened and the diagnosis confirmed. The patient afterward died of general peritonitis.

Dr. F. I. Dixon, of Lewiston, details a case in a man, twenty-seven years old, who fell through a trap-door seven or eight feet into a cellar. He complained of injury to his right side, but was not sick enough to send for a physician. This feeling of discomfort continued for two or three weeks, when symptoms of appendicitis appeared. Dr. Dixon was called on Friday. The diagnosis was made on Saturday. Sunday night the patient suffered severe pain and became collapsed. Incision made on Monday showed the abdomen full of free pus. Two enteroliths were found in the appendix and a gangrenous portion between them. Death occurred in a few hours.

The same physician, in January, 1897, operated on a man, thirty years of age, in an advanced stage of appendicitis. Old adhesions were found, in keeping with the history of repeated attacks. The man died a short time after the operation. Though no history of violence was obtainable at the time, several months later the following facts were related by the patient's mother: In the summer of 1896, when on a small island, the patient, in jumping from one shore to another, felt a sudden, sharp pain in the right iliac region, so sharp as to make him lie down. He was a long time in getting home, having to lie down often to rest. He was about the house for several days before he was able to return to his work. Between that time and his last illness he suffered from three or four attacks.

Dr. Donovan also reports a case in a boy of nine years of age, who was jumping from a height to the ground. In three or four days appendicitis developed. The appendix was removed and recovery followed.

Dr. John Sturgis reports a case in a girl, seven years old, who fell from a swing, and developed appendicitis three days after the accident. The case was treated medically and recovered.

He also reports a case in a man, twenty-two years old, who was leading a frisking and jumping horse. In trying to hold him the man strained his side. This was on Friday. On Monday afternoon severe pain began; tumefaction and the other usual signs of appendicitis followed in rapid succession. No surgical interference was allowed. Recovery seemed perfect, and the man is now in the United States navy.

The following cases are of a slightly different class and show the effects of occupation:

Dr. Donovan reports a case (seen by him in consultation) of competitive wood-sawing between two young men. The trial ended on Saturday night, and on the following Monday one of the competitors developed a well-marked case of appendicitis. The case was treated medically and the patient successfully passed through a second attack.

Dr. B. F. Sturgis, of Auburn, reports a case in a man who did a hard day's work in the hay field on Saturday, pitching and raking the hay. The next night it was possible to make a diagnosis of appendicitis.

Dr. Sprague, of Turner, reports a case of a boy of sixteen, unused to labor, who shovelled sawdust all day. Pain began within twenty-four hours, and the usual symptoms of appendicitis followed. The abdomen was opened on the tenth day. Recovery was perfect, though the wound healed slowly. It may be interesting to note that just before this boy was operated on he told some of the physicians present, that his first pain was very severe, and was felt immediately after "skipping" a stone along the surface of the water on the day of his labor with the sawdust.

The same observer reports a case in a tailor who worked hard throwing wood into a shed. Another in a man who had done a severe day's work sawing ice.

Reports of such cases can be multiplied indefinitely, but I have mentioned enough to illustrate the several classes of accidents causing appendicitis, namely, external violence, direct and indirect, sudden strains, and repeated strong contractions of the abdominal muscles.

It may not be always easy to trace the relation of the cause, traumatism or strain, to the effect, appendicitis. But from my experience I believe that such a cause exists in a far greater proportion of cases than we imagine, till we search carefully for it. The relative percentage of the occurrence of appendicitis can be logically explained, to my mind, in no other way.

This explanation brings the subject into prominence from a medico-legal standpoint. Some of these cases are plainly the direct result of external violence, and I believe accident insurance companies, or corporations and individuals responsible for the occurrence of the accident, are as plainly liable for them as for a broken limb.

It is well for us to bear in mind that small injuries may give rise to grave diseases, and also that, this fact being known to the public, "strained relations" between cause and effect will be more frequent than ever before. Careful notes of all such cases should be kept, so that if suit be brought the full history from beginning to end may be given.

We may, I think, reasonably draw these conclusions:

1. That general prevalence of catarrhal conditions of the bowels, perhaps as an accompaniment or result of the grippe, is responsible for a large part of the general increase in prevalence of appendicitis.

2. That accidental injuries, strains, and work demanding strong contraction of the abdominal muscles may be held accountable for the greater prevalence of the disease in males.

3. That such injuries and strains act by forcing material, loaded with the bacteria which produce appendicitis, from the cæcum into the vermiform appendix.

4. That in consequence of the irritation of such material or from some other cause, these germs here find a favorable soil for their multiplication and development.

5. That in common with other germ diseases a time of incubation must elapse (for the multiplication of these germs) before symptoms sufficiently marked to prove characteristic of appendicitis can appear.

6. That the disease is of growing medico-legal importance, as many cases are of traumatic origin, and may therefore give rise to proper suits for damage or valid claims against accident insurance companies.

The history of some of the cases narrated by the writer might easily lead to the suspicion that circumscribed peritonitis was primarily the effect of trauma and that the appendix was involved secondarily.—W. B.

APPENDICITIS—A POSSIBLE CAUSE—THE USE OF THE LIGATURE—IS IT NECESSARY?

BY WM. T. OPPENHIMER, M.D.,

President of City Board of Health, Richmond, Va.

The subject for the evening's discussion, as announced in the notices, was appendicitis. I do not wish to take in such a vast subject, only to confine myself to the cause, the results of inflammation and certain procedures for relief. I have often been twitted for pressing the theory that so many diseases were due to the accumulation of gas in the intestinal canal. Possibly 50 per cent. of all cases of sickness is due to some irregularity, imprudence or defect in digestion. The question is asked, "Why do we hear more of appendicitis now than formerly?" I would anwer that the disease was not so well known, and that possibly as much existed then as now, but under different names, e. g., many cases formerly diagnosed as peritonitis were fulminant appendicitis. But nevertheless I claim the disease is more frequent now. Possibly the cause may lie in improper food. Bread is the most common food, and the common baking powder used has caused more and different varieties of indigestion than formerly, probably affecting the digestive juices. I bring this out although I have no statistics to prove it, for I believe that appendicitis is nothing more than indigestion in the appendix. Authorities on the subject refer to the blood-vessels, sex, etc., when naming the causes. The point I wish to make is that it is the result always of an accumulation of gas, never of plugging of the artery or sloughing. I believe that the capillaries are so numerous that even with blocking of the artery collateral circulation is soon established.

In every case of appendicitis the patient is more or less dyspeptic. It may even be his first attack. The resulting gas accumulating in the cæcum, the appendix becomes blown up and its orifice is blocked. In recurrent cases the orifice may be more and more narrowed with each succeeding attack, until it is finally occluded, the circulation is cut off entirely if the distance is great, and sloughing results.

The points I have stated are altogether different from those heretofore brought forward, and I would like the gentlemen present to think of them.

Why do more men than women suffer from appendicitis? The reason given by an authority is that in the latter sex the appendicular circulation is reinforced by a branch from the ovarian artery. I contend that is because the circular muscular fibers around the orifice of the appendix are stronger in the male, the tension is greater, and, therefore, closure is more likely. I do not deny that the circulation in women may supply more blood.

The points brought out have great bearing on the treatment, namely, food. Indigestion of all forms should have the closest attention, for the first seizure may bring on an attack of appendicitis.

[The writer is apparently enamored of the distension theory, even to the verge of the ridiculous; but let us not laugh prematurely—careful investigation along this line might surprise us in our ignorance and substantiate his hypothesis.]—W. B.

OLIGOPHOSPHATURIA—A WELL-DEFINED AND IMPORTANT SYMPTOM IN DISEASE.

BY GEORGE FREDERICK LAIDLAW, M.D., NEW YORK.

When Dr. Richard Bright entered upon the series of observations that has culminated in the world-wide recognition of the kidney lesions that bear his name, there was associated with him a man as enthusiastic in research and as accurate in his workmanship as was Bright himself. This man was Bostock. Bright studied the lesions in the kidney and established the general features of his proposition of the dependence of dropsy and albuminuria upon these renal changes. Bostock made chemical analyses of the urine and of the blood of the same cases, and supplied facts concerning the deranged urinary secretion, without which much of Bright's proposition would have remained pure conjecture. All studies in the anatomy of renal disease which have been made since that time are based on the work of Bright. Our knowledge of the chemical properties of the blood and the urine in Bright's disease is based on the work of Bostock.

Bostock discovered that the urine of the patients under consideration was deficient in solids; he noted the deficiency both in urea and in the mineral salts. In the blood he found a substance resembling urea, and also an excess of the same salts that were deficient in the urine, and thus laid the foundation of our knowledge of uræmia. The presence of urea in the blood of nephritic cases was confirmed by Wilson in 1833,[1] and by Christison in 1839.[2] In this manner the substance urea took the lead in interest and apparent importance, to the neglect of its fellow urinary

[1] "On Fits and Sudden Death in Connection with Disease of the Kidney."

[2] "On Granular Degeneration of the Kidneys and its Connection with Dropsy, Inflammations, and Other Diseases."

constituents, the inorganic salts. A review of the publications of the past twenty years shows that this attitude is still maintained by many competent authorities.

However, in our recent urological literature there are signs of an awakening. The inorganic salt is growing in importance, and the quantity of urea excreted is becoming less and less an element of certainty in prognosis. The growth of the idea has been slow. There was, first, in 1827, Bostock's observation[3] that in the newly-discovered kidney disease the inorganic salts of the urine were present in much smaller quantity than in health. Next came Dickinson, in 1868,[4] with his careful quantitative analyses, revealing the fact that in chronic kidney disease there is a difference in the excretion of the different salts. In "granular degeneration" or interstitial nephritis, in amyloid kidney, and to a less extent in tubal or diffuse nephritis, he found that the excretion of phosphates in the urine during twenty-four hours was markedly deficient, the sulphates being less affected, and the chlorides usually appearing in normal quantity until late in the disease. There is another long interval until, in 1881, Fleischer[5] published his studies on the urine of nephritis. In speaking of chronic interstitial nephritis, he says: "The excretion of chlorine was the same as in healthy persons. . . . Both absolute and relative excretion of sulphuric acid in one case was lower; in another markedly less than in healthy persons. . . . The phosphoric acid excreted (in the form of phosphates) was in all cases, relatively and absolutely, decreased," as compared with a healthy person of the same sex and weight, and kept on the same diet. Fleischer discusses the reason for this peculiar inability of the chronically diseased kidney to excrete the phosphates, while the chlorides and sulphates pass freely into the urine; but he arrives at no profitable conclusion thereon.

In 1884, Purdy[1] is able to state that "he regards the diminution of phosphoric-acid excretion (in the form of phosphates) by the kidneys almost as constant a feature of the urine in Bright's disease and allied lesions of the kidneys as the presence of albumin in the urine." Again, speaking of chronic interstitial nephritis: "More or less reduction is to be noted of the quantity of all the urinary solids, the chlorides suffering the least reduction and the phosphates the most. With regard to the phosphates in particular, the diminution in the quantity of phosphates in the urine may be regarded almost as constant a feature of this disease as the presence of albumin."

Clifford Mitchell has confirmed this statement.[2]

I can not only confirm the statement of these observers, but will go a step further, and say that a deficient excretion of phosphates in the urine is the only constant urinary symptom of chronic nephritis with interstitial changes; it is more constant than albuminuria, more constant than low specific gravity or increased quantity of urine.

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[3] "Reports of Medical Cases."
[4] "On the Pathology and Treatment of Albuminuria."
[5] Deutsches Archiv fur klinische Medicin, 1881, p. 129.
[1] "Practical Urinalysis and Urinary Diagnosis."
[2] Oral communication to the writer in 1893.

Bright himself, in 1836,[3] Christison in 1839,[4] Rayer in 1839, and all observers since, have noted the variability of albumin in the urine of the "granular kidney" or chronic interstitial nephritis. It is recognized by all that in this disease albumin may be very scanty, or may even disappear for long periods. Cases are recorded by Fleischer and Rosenstein, to which I can add six from my own observations, in which the excretion of urea, chlorides, and sulphates was practically normal; but neither I nor any other urologist has been able to record a case of chronic interstitial nephritis with a normal excretion of phosphates.

It appears, then, that in chronic interstitial nephritis and in waxy kidney there is a constant urinary symptom, namely, a diminished daily excretion of the salts of phosphoric acid. For convenience, in my clinical records and urological studies, I have called this symptom "oligophosphaturia," a self-explanatory term, analogous to "oliguria" and "oligocythemia."

Constant urinary symptoms of chronic interstitial nephritis are not so numerous that we can afford to neglect any of them. It remains to consider how far this symptom, oligophosphaturia, is pathognomonic of chronic nephritis. Deficient daily excretion of phosphoric acid is not confined to nephritis; it is found in gout (Purdy) and chronic lead poisoning (Gaucher), some forms of anæmia (Deeke and Simon), in many acute fevers (Purdy and Simon), including the febrile stage of intermittent fever (Simon), during the intermission (Purdy), during pregnancy (Purdy), in acute yellow atrophy of the liver (Frerichs and Fleischer), and in cirrhosis of the liver (Hegar).

Note that most of these conditions are in some way related to deficient renal activity. Gout and lead poisoning frequently terminate in renal cirrhosis; anæmia tends to insufficient nutrition of the renal tissue, degeneration, and inefficiency; and the acute fevers, with their scanty, heavy urines and frequent albuminuria, point plainly to inadequate renal action. In my experience, the oligophosphaturia of pregnancy is a frequent but not an invariable occurrence. It is related distinctly to a greater or less degree of renal competence. The relation of oligophosphaturia to hepatic disease deserves more extended discussion than is possible in this article.

In a further communication, I hope to discuss the relation of this deficient excretion of phosphates to the "prealbuminuric stage of Bright's disease," described by Mahomed,[1] and the "diathèse Brightique," of Dieulafoy, and incidentally to demonstrate the value of the symptom in the early diagnosis of chronic nephritis.

The object of the present paper is simply to demonstrate to my fellow urologists the increasing importance that is being attached to the persistent deficiency of phosphates in the urine; to suggest a descriptive name, oligophosphaturia; and to urge the more frequent quantitative estimation of these salts by accurate analysis as an important element in every examination of urine. The estimation is easily and quickly made by the uranium-nitrate titration that is described in all standard text-books.

[3] Guy's Hospital Reports.
[4] "On Granular Degeneration of the Kidneys."
[5] "Traité des Maladies des Reins."

THE INFLUENCE OF HEART DISEASE ON LIFE ASSURANCE.*

DISCUSSION.

The Chairman : I am sure that Dr. Williams has given us ample food for discussion, and we are very much obliged to him for completing his first paper. This one seems to be a very good corollary to the other, and the summary to contain an immense number of propositions, mostly in the way of information, some of which, no doubt, you will discuss at some length.

Dr. de Haviland Hall : I will first take the question of adherent pericardium. If I remember rightly, in the discussion on Dr. Williams' previous paper, I pointed out that it was impossible to diagnose adherent pericardium if you excluded adhesion of pericardium to chest wall. You mightmake a sort of a guess at it, but you cannot, with any sort of certainty, diagnose an adhesion of the heart and pericardium. Therefore, these cases do not come under the category of conditions to be considered for life assurance. One factor in accepting lives for insurance is the occupation of the applicant, and that I do not think Dr. Williams touched upon very definitely. It seems to me that opposite conditions are required for heart disease and cases where there is any tendency to phthisis. A man who has a family history of phthisis or who, in the past, has had some signs of phthisis, if he is living an out-door, active life, you might certainly consider, and possibly pass him, with a considerable addition. Now, this active, out-door life is not a condition that would be quite desirable in a man with valvular disease. I may mention a case which I had recently before me: a solicitor in comfortable circumstances, able to do his work pretty much when he liked and where he liked. This is the kind of individual we should do well to pass for insurance, even though he had valvular disease. Whereas, if the applicant had been a farmer, or a man engaged in out-door, active life, I should have had some doubt in passing him.

The view that Sir William Broadbent holds as to the frequency of aortic stenosis is one not generally held. It certainly has been displaced from the prominent position it occupied in the times of Walshe. I am of opinion that many cases are called cases of aortic stenosis which have no title whatever to be so designated; they are really cases in which a little roughening of the valve produces a murmur, but there is no obstruction. I have passed several cases in which there has been a distinct aortic murmur, but in which there was no sign of cardiac change, and where I believed that I had to deal with a roughened valve. Therefore, I do not attach so much importance to an aortic systolic murmur as some authorities would do. In speaking of the causes of aortic disease, Dr. Williams left out what I look upon as one of the most important, certainly in cases of aneurism, namely, syphilis I think that it plays a very prominent role, and that one should realize the extreme importance of inquiring as

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to the history of syphilis in cases of aortic disease. The more I see of post-mortem work, the more I am struck with the frequent dependence of aortic disease on syphilis. There is one interesting point in the clinical symptoms of an organic regurgitation, which I think Dr. Williams might have alluded to, and that is the loudness of the murmur. All the cases of murmurs which I have heard at a distane from the patient have been examples of aortic regurgitation.

I should be a little more cautious than Dr. Williams in regard to aortic regurgitation. I do not consider I should feel justified under any circumstances in recommending a man with an aortic regurgitation murmur. I grant that there may be cases in which damage has been done, but compensation is fairly well maintained; but at present we seem to know so little about the conditions which may follow upon aortic regurgitation that the safest plan is to absolutely reject all cases of this lesion. The cases which have given me the most trouble in the past, and most anxiety for the future, are those of fatty heart. This is possibly due to the fact that there have been two or three very sudden deaths in my office from this cause. One of these, a man of forty-nine, I examined in consultation with my colleague and another examiner. When we passed this individual with a small addition of four or five years, I remember making a special note at the time, which I took away with me, because I was dissatisfied with the condition of his heart; but, being the junior, I gave way to my seniors. What I noticed about him was this: feeble impulse and feeble first sound. Six years later he was found dead in bed, and the verdict at the coroner's inquest was "Death from fatty heart." This was just the condition one might reasonably expect. Given a feeble first sound and a feeble impulse, if the condition of the arteries is not satisfactory, that is to say, if the arteries are rather hard, in these cases I think we should be most careful in inquiring into the antecedents and family history of the applicant, because, if we find that he belongs to the class of cases so well described by our President in his inaugural address, where there is an early breaking-down history, then I certainly think we should refuse to accept such a life with any premium. The only point I have to notice about the remarks Dr. Williams made in connection with the pulse is as regards intermission. I am disposed, certainly in patients under fifty, to look upon an intermittent pulse, provided it is not very frequent, *i.e.*, where there are not more than two intermiss ions, we will say in fifteen seconds, as possibly depending upon dyspepsia or a gouty condition. I have certainly seen it induced in many persons by indigestion, and going away when the patient's digestion has been put in better condition. I have, therefore, not attached much importance to an intermittent pulse. I think an irregular pulse is a much more serious thing from an insurance point of view than an intermittent pulse. Sir William Broadbent's remarks are very interesting, but I should attach more value to them if he had been an adviser to an insurance office himself. I cannot help thinking that the people who have not the responsibility of being medical advisers to a life assurance office take a rather more cheerful view of assurance than those with that responsibility.

Dr. E. Symes Thompson: I have a few observations to make, sir, and the first is this: that, whereas the extra rating that should be suggested for well-defined diseases of the heart is a matter about which we can speak with confidence, the extra rating which we can apply in cases of vague, ill-defined, defect of heart is a much more difficult thing to estimate. When we compare the conditions of heart disease in relation to prognosis, the experience gained in insurance practice, with the conclusions to which we have arrived during the last twenty or thirty years, we can estimate with fair confidence the prospects of life in cases of definite heart disease, whether of the aortic or the mitral valve. But I regard it as a matter of much greater difficulty to judge about conditions of degeneration of arterial wall, of adherent pericardium, and so forth. As to adherent pericardium, I entirely conform to what Dr. de Haviland Hall has said. The circumstances under which one would be bold enough to state as a matter of fact that a patient was suffering from adherent pericardium, when he came to you for insurance, would be very exceptional indeed. Of course, when we have a patient under our care and can watch over him and know all about the history, we may be in a position to form a fair surmise that the pericardium is adherent; but I do not recollect any instance in which a patient came to me in insurance practice in which I was bold enough to state that adherent pericardium existed. I should, therefore, be disposed to put aside the first conclusion of Dr. Williams. When we come to deal with the question of degenerative change in the heart, we are still in what I should regard as the indefinite class of case. We may form a judgment that there is a degenerative change in progress, but when we come to define whether it is of a fibroid or fatty nature, I believe we should often be found at fault in our decisions. As a specimen of the indefinite, or ill-defined class of cases, which is more difficult to assess, and more unsatisfactory from an assurance standpoint than cases of pronounced valvular lesions, I would mention a case examined for assurance this afternoon.

A. B., a traveler, aged forty, assured at ordinary rates ten years ago. Father and mother both died at the age of forty from unknown causes. No history of illness. Height, 5 feet 5. Weight 11 stone (an increase of two stone in ten years). Tendency to accumulate abdominal fat. Liver full. Venules over costal margins large. Bile acids in urine. Heart's action hurried, flappy, diffused sounds. No increase of cardiac dullness and no murmur. Complexion rather flushed. Tongue dented.

SURGERY.

IN CHARGE OF

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THE SURGICAL TREATMENT OF SEPTIC DISEASES OF THE ABDOMEN AND PELVIS.

By Charles B. Nancrede, A.M., M.D., Ann Arbor, Michigan, Professor of Surgery and Clinical Surgery in the University of Michigan; and Wm. F. Metcalf, M.D., Detroit, Michigan.

Adequately to discuss the surgical treatment of peritonitis within the short space of twenty minutes is clearly an impossibility. I shall therefore proceed to state, in the form of propositions, certain facts as they appear to me, attempting no explanation or defence of the position assumed. Only in this way has it seemed possible for me to meet the views of your committee, and aid in starting a discussion of sufficient scope. If those who discuss my propositions will recognize the limitations thus set by myself, they must see that much has been necessarily left unsaid, much implied, and hence they will do justice both to the subject and the present speaker.

Although some of my propositions may in a measure embody the statements made by some of the speakers preceding me, they are necessarily re-affirmations from the clinico-surgical standpoint, and serve as premises to my conclusions as to surgical treatment.

Proposition I.—There is a primary peritonitis, usually due to infection by one variety of the pyogenic cocci, although mixed infection is not uncommon. This arises independently of any "infection antrium" in a diseased abdominal viscus or penetrating wound of the parietes. This "terminal infection" occurs late in chronic renal, hepatic and cardiac affections. From the lowered vitality of the tissues induced by the imperfect nutrition present in these diseases, germs entering the circulation at distant "infection atria" are not destroyed or eliminated as in health. The normal inhibitory power over germ growth possessed by the blood serum has been shown to be notably diminished in both advanced renal and cardiac affections. Moreover, the physical conditions of the circulation favor the accumulation of germs in such numbers, that while innocuous to a healthy serous membrane they may, and often do, overcome the resistance of one whose nutrition is imperfect. This form is rarely amenable to operation.

Proposition II.—Postoperative peritonitis, or that following infective processes in a parietal wound, is usually a mixed infection, the predominating organisms again being the pyogenic cocci, rarely bacilli. The former fact serves to emphasize the paramount importance of thorough disinfection of the field of operation and the hands of all those who may come in contact with the wound, the instruments or dressings. Moreover, this proves that in most instances postoperative peritonitis is an entirely preventable disease, as are also many peritoneal inflammations due to penetrating traumatisms, although in posttraumatic peritonitis infection has usually occurred before the surgeon's arrival, from the abdominal parietes, fragments of clothing carried into the abdominal cavity, the vulnerating object, or the injudicious examination of the wound by the friends or the family physician.

Proposition III.—The occasional presence of bacilli in conjunction with other mico-organisms, that is, a mixed infection, shows that the surgeon is not always blameworthy, because bacilli may either intensify the action of other germs present in too small numbers to be harmful, or actually be the chief factors in a peritonitis following operation. The bacilli often come from the intestine when firm adhesions have been separated. The intestines have in no sense been penetrated, but their peritoneal coat has been more or less completely stripped off, and ecchymoses or minute lesions of their mucous coat have resulted from necessary handling, rendering them *pervious to germs*, hence the peritoneal infection. Again, such injured points present a *locus minoris resistentiæ*, which it is well proven, experimentally, will render efficient an infection by a given number of germs introduced into the peritoneal cavity, which in the same, or larger numbers, would have proved harmless with an intact peritoneum. Hence all unnecessary intra-abdominal traumatism, however trivial, should be avoided, all surfaces denuded of peritoneum when possible being covered in by suturing. The fluid employed for irrigating should be normal salt solution, because this does not damage the peritoneal endothelium as plain water does; any damage to these cells lowers the resistance of the peritoneum to germs, favors their implantation, and hence the establishment of an infective peritonitis.

Proposition IV.—A distinct class exists where the infection comes solely from the gastro-intestinal or genito-urinary tracts. While this form of peritonitis usually follows operations involving actual section of one of the hollow viscera, the statements contained in the preceding proposition explain the occurrence of a certain number. Many years ago it was a well-recognized clinical fact, that cases requiring the separation of extensive adhesions were peculiarly liable to be followed by dangerous peritonitis. Although many of these old-time accidents are avoidable by asepsis, it must never be forgotten that no perfection of aseptic technique will *invariably* render innocuous faults or misfortunes of *operative technique*. Therefore, when extensive surfaces of the hollow viscera are denuded of peritoneum, which surfaces are not reparable by suture, some form of drainage should be instituted, preferably Clark's; a resort to such expedients will often prove successful in averting a fatal termination.

Proposition V.—Because intestinal paresis, if absolute and non-relievable, means certain death, despite the most perfect asepsis and operative technique, its prevention and relief demand our most earnest consideration.

Proposition VI.—Intestinal paresis can best be prevented by early operation, because it results from an extending infective process which can often thus be successfully combated in its earlier stages. When no operation is done, or the condition supervenes after operation, calomel by the mouth, followed by salines, aided by purgative rectal enemata, strychnia hypodermically, the abdominal ice-pack, washing out of the stomach when fecal vomiting is marked, and rectal feeding embrace all that can be done, and are occasionally successful. Cold somewhat inhibits germ growth, favors a return to the normal intra-abdominal circulation, hence lessening the accumulation of germs while increasing the resistance of the tissues from improved nutrition, and stimulates to contraction the muscular coat of the intestines. Strychnia is a most effective agent in securing a re-establishment of the motor functions of the bowel, while purgatives aid both cold and strychnia by emptying the over-distended intestines, which often exert such pressure upon the thoracic viscera as to fatally embarrass their action; toxic substances, which directly or indirectly are producing the paresis, are eliminated. Purgative enemata composed of Epsom salts, glycerine and turpentine may be employed as succedanea or substitutes for purgatives by the mouth. If during the operation intestinal paresis is found or suspected, by means of a syringe and hypodermic needle one ounce of Epsom salts in saturated solution should be injected into the upper part of the small intestine, and the opening closed by suture.

Proposition VII.—Increased frequency of pulse, especially when out of proportion to either temperature or respiration, more surely indicates the need for operation than any other symptom. High temperature, great pain and abdominal distension, with or without vomiting, may be and often are sufficient indications, but may all be absent in some cases most urgently demanding surgical intervention. Distension, pain and vomiting are often at least temporarily relievable by purgation, aided perhaps by some of the other measures mentioned in Proposition VI.; these statements are especially true for appendiceal peritonitis.

Proposition VIII.—When both the local and general symptoms of a peritonitis are undoubtedly stationary immediate operation is not *demanded*, although this may be desirable upon other grounds than the immediate risk to life.

Proposition IX.—Any extension of a peritonitis, shown either by increase of the local or general symptoms, still more by both, usually demands prompt intervention as a life-saving measure.

Proposition X.—Generalized, that is, septic peritonitis cannot be efficiently treated by mere irrigation and the introduction of drainage tubes. The minimum which is effective is, after irrigation with many gallons of salt solution, the introduction of numerous gauze drains reaching practically all parts of the abdominal cavity; supplementary lumbar and hypogastric drainage openings are also often advisable. If, however, the condition of the patient sanctions considerable manipulation and the consumption of additional time, when any adhesions are readily separable, free enlargement

of the parietal incision should be done, and portion by portion all the movable hollow viscera should be brought externally, surrounded by hot towels, liberally douched with hot saline solution, and carefully wiped with bits of gauze to remove, as far as safe, all infected exudate. As each segment is cleansed it should be returned into the abdominal cavity. Evisceration *en masse* must be avoided, because, although it requires prolonged manipulation of healthy intestines to produce shock, this is rapidly produced when they are inflamed. Injection of a saturated solution of magnesium sulphate, as described in Proposition VI., should be given, and numerous strips of gauze should be introduced so as to drain all parts of the abdomen with or without counter-openings. The use of ice, strychnia, purgatives, et cetera, as described in Proposition VI., are also indicated.

Proposition XI.—Too much stress cannot be laid upon the imperative necessity of previous walling-off of the general peritoneal cavity by careful packing with gauze when opening any intra-abdominal pus collection which alone renders the procedure either justifiable or safe; the pus, when possible, should be removed by pieces of gauze or sponges rather than by irrigation, which might diffuse the infective material over a wider area. Irrigation is, however, sometimes the sole or most efficacious means to remove the pus.

Proposition XII.—When doubt exists as to the necessity for drainage, the introduction into the peritoneal cavity of one or two pints of warm saline solution, close suturing of the wound and elevation of the foot of the bed about eighteen inches will prove sufficient. This position, as Clark, the originator of the method has shown, tends to relieve the abdominal distension, favors the normal peritoneal current toward the diaphragm, the peritoneal covering of which he has shown plays the most important role in the removal of fluids and germs from the abdominal cavity. Assumed immediately after operation it materially lessens accumulation of blood in the abdominal viscera, one of the most potent factors in maintaining shock, and lessens the tendency to oozing.

Proposition XIII.—Tubercular peritonitis is best treated by incision, separation of soft adhesions, free irrigation and closure of the wound without drainage.

Proposition XIV.—Codeine rather than morphine must be employed to secure sleep, et cetera. Morphia is never indicated as a curative agent and should rarely be needed to secure sleep.

C. B. N.

* * *

The subject—"Septic Diseases of the Pelvis"—includes the whole of gynecology except malformations, certain neoplasms, malpositions and trauma. I therefore shall endeavor only to outline the general principles which govern me in the treatment of these conditions.

The character of the invading micro-organism, the location of resulting lesions, the reflex disturbances, the resistance of the tissues and the age, circumstances and environment of the patient are the determining factors in the method to be employed.

The tubes and ovaries become infected not only by continuity of surface, but through the lymphatics and blood-vessels. Inflammation is con-

servative, it is the process by which nature prevents the further ingress of germs, it is the symptom of their presence.

In vaginitis, early and thorough disinfection is essential to protect the uterus and its appendages. In simple vaginitis, by which I mean mild cases of inflammation, the etiology of which is uncertain, the treatment should be rest, mental and physical, as perfect as circumstances will permit, vaginal douches of three to six quarts of a saturated solution of boric acid, temperature about 110°, every eight hours, given from a fountain syringe, the patient being in a recumbent position. The attendant or patient should be instructed as to the importance of keeping the douche nozzle surgically clean. An occasional douche of one to ten thousand bichloride of mercury should also be given. When from the sudden onset of the inflammation, its severity, and the quick involvement of the urethra and vulvo-vaginal ducts, we have reason to suspect a gonorrheal origin, the bichloride solution should be used, instead of the boric acid. The attending physician should swab the vaginal walls thoroughly with about one to one thousand five hundred solution of bichloride of mercury, using a speculum which dilates the vagina, thus permitting the bottom of every sulcus to be reached. The parts should then be douched with warm water and a tampon saturated with boroglyceride inserted against the os uteri. If the discharge be profuse and the sphincter vaginæ tight, a gauze drain should also be left in place. If this course were followed the records of intra-abdominal surgery would be shorter. When the inflammation is chronic, cure is hastened by the application of a two per cent. solution of silver nitrate every second day, any cause for discharge from above being first removed. The principle of drainage must be observed in these cases also. If the urethra be involved it should be irrigated with a solution of bichloride of mercury one to twenty thousand, after injecting a three per cent. solution of cocaine.

When diphtheritic membrane is present, constitutional measures should also be used, antitoxin being employed early. When patches of the vaginal membrane are destroyed or denuded of epithelium, care must be taken to prevent adhesions resulting in atresia. I have dwelt thus at length upon vaginitis because this passage is the avenue to the uterus and its appendages and through these to the abdominal cavity.

In endocervicitis, the application of equal parts of Churchill's tincture of iodine and carbolic acid is effectual. In many cases the sphincter at the internal os guards effectually the corporeal endometrium from invasion. Infection having once entered the uterine cavity, direct invasion of the muscle through the glands which dip down into it is of frequent occurrence. The resulting metritis as well as subsequent infection of tubes and ovaries depends upon the character of the germ and the resistance of the tissues. Menstruation and pregnancy favor the extension of infection because of the thickening of the mucosa, the elongation of the glands, the increase in interglandular substance by multiplication of embryonic cells, the infiltration of fluid and the natural enlargement of the blood and lymph vessels. There is no normal barrier to infection of the corpus uteri. An inflammatory one is built when agents of infection enter the endometrium. The effectiveness of this fortification depends upon the

vitality of the individual and the virulence of the invading germ. This natural fortification should not be broken unless the invading micro-organisms are simultaneously destroyed. The result of the labors of the anatomist, microscopist and pathologist, which I have endeavored tersely to portray, tells us emphatically that after abortion and labor, where symptoms of sepsis are present, care should be taken in cleaning the uterus, but a sharp curette should not be used. Clinical experience emphasizes the truth of this assertion. In these cases the principle of drainage should be respected by thorough dilatation of the cervical canal, the cavity cleared of debris by the finger if possible, if not, by a dull curette and placenta forceps if needed, and cleansed by a flowing antiseptic solution. I prefer one to four thousand bichloride of mercury for this purpose. I think the application of equal parts of iodine and carbolic acid not only disinfects deeply, but temporarily strengthens the barrier.

Before the above course is begun, a culture of the discharge should be started, that the indicated serum treatment may be resorted to in case of need.

The curettement is often followed by chill and higher temperature, due perhaps in many cases to increase in the general metabolism which commonly accompanies dilatation of the cervical canal.

Notwithstanding the above outlined treatment, symptoms of sepsis may become more marked, indicating involvement of the uterine sinuses. If vaginal hysterectomy is to be resorted to it must be done before metastatic abscesses have formed.

We will now consider the septic invasion of the endometrium of the non-pregnant uterus. In such cases the extension of the poison to other tissues is much less rapid. The whole mucous membrane down to the muscularis should be cleared away by a sharp curette. The principle of drainage must be observed and embarrassments of circulation by cicatrix should be removed that the local nutrition may improve, thus increasing the resistance of the tissue to that point of perfection which will enable it to withstand subsequent attacks of micro organisms. Permit me to say here that microbes never primarily successfully attack healthy tissues in any part of the body. They are always found in dead tissues unless it is soaked in antiseptics, and they generally arrive as soon as the nutrition of a tissue is impaired.

If the muscle structure has become invaded as shown by edema and tenderness, and it may be various reflex disturbances, hysterectomy must occasionally be resorted to. I wish here to again emphasize this observation—that certain pathological lesions of the pelvic organs being given, the reflex disturbances present in inverse ratio to the degree of local soreness and pain. This fact should compel great care in examination.

In periuterine inflammations the location of the foci of infection and the avenue of invasion are factors in determining the method of treatment. In some cases the invasion is by continuity of surface to the Fallopian tubes, the resulting infiltration preventing leakage into the peritoneal cavity or drainage into the uterine cavity, the inflammation extending through the walls of the tubes to their peritoneal covering, causing adhesions high in the pelvis. In these cases I prefer to remove

the tube or tubes by abdominal section where severe metritis does not exist, particularly where it is thought possible to save one of the appendages. In some of these cases, by patching, one tube and ovary may be restored, which can in but few cases and with difficulty be done by the vaginal route. In such cases (where it can be avoided) it is better not to ligate *en masse*. I mean where the pus tube can be distinctly outlined, because this disturbs the nutrition of the tissues included in the ligature, favoring sepsis, as there are generally points of infection in this tissue. The size of the stump left is also objectionable, because of the difficulty of coapting the peritoneum over it to prevent subsequent adhesions.

When the collection of pus is below a wall which separates the pelvic from the abdominal cavity, free vaginal incision and drainage is all that is required, provided the damage to the uterus and its appendages can be remedied, and in many cases where a radical operation is indicated it is advisable to precede it by vaginal incision to relieve septic symptoms and increase the patient's vitality. I am supported in every statement by numerous experiences with which I do not wish to burden this essay, yet I will report one typical case I saw recently.

The patient's history showed that she had suffered from occasional attacks of pain in the left ovarian region. A month before I saw her a polyp which partially occluded the cervical canal had been curetted away. A few days later chills and fever and delirium presented. A week ago last Monday I saw her in Albion with Doctor Parmeter, who had made the diagnosis of pelvic abscess. Her temperature then was 103°, pulse 118, and tongue dry. She was only semi-conscious. The body of the uterus was subinvoluted and pushed to the right, the cervix pointing to the left and fixed in inflammatory exudate. The vault of the vagina was tense and hard, the abdominal walls thick and tympanites marked. I therefore could not determine the presence or absence of fluctuation with certainty. We put her upon the table at once, gave her chloroform, made an incision posterior and close to the uterus, from one uterine artery to the other, permitting the entrance of four fingers. I found to the left and as high as I could reach an abscess containing more than a pint of pus.

When I am sure the organs cannot be reclaimed, if the patient's vitality warrants, I prefer to do a vaginal hysteroophorectomy to save the patient further delay, anxiety and expense.

When it is found necessary to ligate infected tissue absorbable ligature should be used. If silk becomes infected, it may be discharged through the rectum, bladder or abdominal wall.

There are many objections to the use of clamps when vaginal hysterectomy is performed for the relief of these conditions. Besides causing pain they destroy the nutrition of the ends of the broad ligaments which, when pus is not present or is low down in the pelvis, should be approximated to make a firm pelvic floor to prevent hernia. The pains in the abdomen subsequent to recovery from vaginal hysterectomy I believe are due to adhesions, especially of the omentum. The intestine also may

become fixed in this opening and deaths from this cause should occasionally be reported.

In cases of abscess of the broad ligament or ovary, due to the bacillus tuberculosis, the uterus may be healthy, the infection coming from above. The same principles, however, govern their treatment.

In certain cases where neoplasm is present and low in the pelvis, or where subinvolution is marked, adhesions being extensive, the combined method is preferable, by which I mean dissection is first made around the cervix uteri and carried up as far as can be done with ease and rapidity, and the operation completed through an abdominal incision.

My experience leads me to assert that there is much less shock in work done through the vagina than by abdominal section. To save the patient's life is one consideration, but to insure her comfort and happiness necessitates the proper operation done by the best method, which implies on the part of the operator diagnostic skill, mature judgment, dexterity, and familiarity with all methods born of true surgical principles. Methods are constantly changing. Principles only are eternal. Life is too dear to trust to method. Methods have fixed boundaries. Conservatism to some means keeping within these lines. Upon the altar of such are sacrificed many lives. Conservatism is acting in each case fearlessly and according to conditions, keeping in mind that the object of life is to function, and the reward of functioning of an organ, as of an individual, tends to harmony.—*Physician and Surgeon.*

THE TREATMENT OF BURNS BY PIRIC ACID.

Syla-Novitzky (*Monatsh f. prac. Dermatologie, 1897, xxiv., 8*). This treatment was first suggested by Thiery, later by the English pediatrist, Pomer, who made use of the following solution:

℞	Acid picric	5.0 (1⅓ drams)
	Spt. vini	80.0 (2½ ounces)
	Aq. destill	1,000.0 (1 quart)

H. Ft. Sol.—Sig.: Use as directed.

A gauze bandage saturated with this solution is laid on the parts (which have previously been disinfected), and covered with cotton wadding, secured by a bandage; this is allowed to remain in position three days without change, then a new dressing is applied, which is not removed until healing has occurred.

The author has treated eight children, from the ages of seven months to ten years, in this manner, and comes to the following conclusions:

1. The dressing described above causes a diminution of the pain, because it is not frequently changed.
2. The secretion is very slight.
3. Healing by first intention is favorably influenced.
4. The scar is smooth.
5. The treatment is practical and cheap, as very little material for dressing the wound is used.—*Pediatrics.*

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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PARALYSIS: ITS FORMS, PROGNOSIS, AND TREATMENT.

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The question of the form of the paralysis should be the first to be considered in each case presenting itself for examination. The simplest and most practical division or classification is that based on the situation of the lesion or disease causing the paralysis. We may say, then, that there are four forms or types of paralysis based on this theory, *i.e.*, the cerebral, spinal, peripheral nerve, and intramuscular. The special symptoms always present in disease of these divisions of the nervous and muscular systems, especially the distribution of the paralysis and the trophic condition of the muscles effected in each, make the diagnosis usually an easy one.

With these explanatory remarks I will take up the first form of paralysis under our classification, *i.e.*, cerebral paralysis. The usual causes are hemorrhages, meningeal and intracerebral, thrombosis (due to atheroma of the cerebral vessels, usually the result of old age or chronic nephritis, or again to endarteritis syphilitica), embolism, tumors, injuries. One characteristic of the paralysis is the distribution, which in the majority of cases is unilateral, involving the lower half of the face only, with deflection of the tongue to the paralyzed side and paralysis of the upper and lower extremity of the same side. A second marked condition is the absence of any atrophy or wasting of the muscles (except long after from disuse). The muscles retain their tonus and remain firm; there is often rigidity or spasmodic contracture from the beginning, and this condition is always present later in the course of the disease, with exaggeration of the reflexes, *i.e.*, in the lower extremity; there is exaggerated patellar reflex and ankle clonus. Again, there are no changes in electrical reaction. There is always a normal response to both the faradic and galvanic currents.

This condition of paralysis without wasting, with the presence of increased myotatic irritability and normal electrical response, differs from all the other forms of paralysis referred to, and is due to disease of the

motor or pyramidal fibres, which pass down from their origin in the cells of the cerebral cortex through the crus, pons, and medulla into the lateral column in the opposite side of the spinal cord. Any lesion of these pyramidal fibres, whether situated in the cortex, subcortical region, internal capsule, crus cerebri, pons, medulla, or lateral tract of the spinal cord, must give and can give only this so-called cerebral type of paralysis, *i.e.*, that form in which the muscles do not atrophy, present no electrical changes in reaction, and are subject to increased myotatic irritability.

We see from the above remarks that disease of the lateral tracts of the spinal cord, as in lateral sclerosis, gives us a cerebral type of paralysis. This is easily understood when we stop to consider that the tract involved in this spinal disease is essentially a cerebral tract of fibres which start from the brain in their course to the cord, receive their origin and nutrition in the cells of the cortex, and serve the muscles only in carrying the impulse or order of action from the brain to them. The muscles depend for their nutrition and growth only on the multipolar cells of the anterior horns of the spinal cord, conveyed to them through the anterior spinal nerves. The form of the paralysis, therefore, is the same wherever the pyramidal tract is diseased; the localization of the lesion depends on symptoms, the result of lesions involving other parts than this tract alone, and serve as landmarks as to the site of the lesion.

The second form to which I would direct your attention is the spinal type, and here I would refer only to the disease of the anterior horns, for I have already placed paralysis from disease of the lateral tracts into our cerebral type. The usual causes of disease of the anterior horns of the spinal cord are inflammation, acute and chronic, hemorrhages, new growths, injuries, and compression, as in caries, spinal fracture, dislocation, etc. The special characteristics of this paralysis are atrophy or wasting, loss of tonus of the muscles, and therefore flaccidity; loss of reflexes; loss of response to the faradic current, and the reaction of degeneration to the galvanic current—always in acute disease, and at least decreased response to faradic and galvanic currents in the chronic forms, or a partial reaction of degeneration to galvanism with decrease or loss of faradic response; and, lastly an absence of sensory disturbance—either anæsthesia or hyperæsthesia.

The most common forms of disease which gives these characteristic symptoms are poliomyelitis, acute and chronic, and progressive muscular atrophy of the spinal type. These diseases have their own special etiology and course, which it is not my province at this time to go into, but they all have that character of paralysis, with wasting, electrical changes, and loss of myotatic irritability, which absolutely differentiates them from paralysis of cerebral origin. Again, in the spinal form the distribution of the paralysis—that is, the muscles affected—differs from that of the cerebral type, being usually bilateral, affecting both sides; or, again, involving only an upper or a lower extremity, or an upper extremity of one side with the lower of the opposite side; while, as I have said, in the cerebral form hemiplegia, or paralysis of one side, usually including the lower half of the face, is the common type.

In transverse myelitis we have both the spinal and the cerebral types

of paralysis—that is, at the site of the lesion we have the muscles paralyzed, atrophied, flaccid, with loss of reflexes, and the characteristic changes of electrical response—*i.e.*, the spinal type; while below the lesion the paralyzed muscles do not waste, are rigid, have exaggerated reflexes, and present no electrical changes—*i.e.*, the cerebral type.

We will next consider our third form—the peripheral nerve paralyses. The usual causes are inflammation from diathetic blood states—as rheumatism, gout, etc.; or some micro-organism—as in diphtheria, typhoid, malaria, beriberi; or, again, some chemical or metallic poison—as alcohol, arsenic, lead, mercury, etc.; or lastly, to injury resulting in compression, lacerations, or section of the nerve or nerves. The character of the paralysis is of the spinal type, *i.e.*, wasting, flaccidity, loss of reflexes, and electrical changes, but associated with it we usually have marked sensory symptoms, especially when the disease is acute in its onset. In acute inflammation of the peripheral spinal nerves there is always great pain on pressure along the course of the nerves, and also in the muscles supplied by these nerves. There is also subjective pain of a burning, gnawing character, almost more unendurable than true neuralgia. The most typical example of this is seen in acute alcoholic multiple neuritis. There is almost always also some disturbance of general sensation, showing itself in incomplete anæsthesia, paræsthesia, etc.

In chronic inflammation of the peripheral nerves, as more commonly observed in lead paralysis, the sensory disturbance is much less marked, often insufficient for the patient to observe it subjectively, although on careful examination it may be brought out objectively. When the nerve is destroyed, either by disease or by injury, of course the paralysis is always accompanied by complete loss of sensation of the parts supplied by it. This sensory disturbance is not present either in cerebral or in spinal paralysis, and is thus of great value as a diagnostic differential point, especially betwen anterior-horn disease in the spinal cord and peripheral nerve paralysis.

In transverse myelitis, indeed, we have loss of sensation below the lesion in the spinal cord, due to disease of the sensory tract, but this sensory disturbance differs from that of the nerve lesion, in that on pressure there is no pain either in the muscles or in the nerves. This differential point is of the greatest importance often in our diagnosis between acute multiple neuritis and acute transverse myelitis.

The distribution of the paralysis in nerve lesions is also somewhat characteristic. A single nerve may be affected, as the musculo-spiral or facial, from either injury, rheumatism, gout, exposure, etc. Certain poisons, again, as that causing diphtheria, affect especially the throat and eye muscles, together with bilateral involvement of the upper and lower extremities. Again, lead involves the extensors, especially of the forearm and the muscles of the hand, only rarely affecting the lower extremities; while alcohol and arsenic first involve the lower extremities, giving double foot drop, and later, as a rule, pass to the upper extremities.

Our last form is intramuscular paralysis or so-called muscular dystrophy. This disease is rare as compared with those already referred to. Its cause is obscure, apparently due to some hereditary influence, and

has its seat in some embryonal development defect. It is observed often in various members of the same family or in collateral branches. Resembling as it does progressive muscular atrophy, it might properly be termed hereditary progressive muscular atrophy with as much appropriateness as we speak of hereditary ataxia. Here the paralysis is of the spinal type, resembling, as we have said, spinal progressive muscular atrophy—*i.e.*, the muscles are wasted, although they may at first appear hypertrophied from fatty infiltration of the muscle fibres and at times actual enlargement of individual muscle fibres; ultimately with time the wasting becomes extreme. There are also flaccidity, loss of reflexes, and electrical changes, characterized by decreased response to faradism and partial reaction of degeneration. Instances of this disease are pseudo-hypotrophic paralysis, Erb's scapulo-humeral type, etc. This form of paralysis is also distinguished by the distribution of the paralysis—in one form affecting especially the legs, in another the upper arms and thighs, or again associating with this the face, giving us then the so-called facio-scapulo-humeral type. Their distribution, their hereditary character, and their occurrence in youth sufficiently diagnosticate them.

Prognosis.—In cerebral paralysis, if the pyramidal tract has been destroyed in any part of its course, recovery is impossible; restoration of nerve fibres in these tracts after their destruction never takes place, as has been proven experimentally and demonstrated by pathology. Paralysis resulting from compression only, as in Pott's disease, etc., even when of long duration, may be entirely recovered from. The prognosis is therefore unfavorable, as a rule, as in most cases of cerebral apoplexy the lesion is more or less a destructive one.

Acute spinal paralysis due to affection of the anterior horns is also rarely recovered from. Here again, as also is usually the case, there has been an actual destruction of nerve structure, *i.e.*, the nerve cells, and they can never be restored. As a rule, one or more extremities remain atrophied and paralyzed. Chronic or subacute poliomyelitis is much more likely to be arrested in its course and recovery occur.

Degenerative disease of the anterior horns or progressive muscular atrophy is incurable, although there may be by appropriate treatment much delay in its usual progressive course.

Transverse myelitis, in what may be called favorable cases, is usually recovered from with evidence of a more or less marked condition of spastic paraplegia.

Peripheral nerve paralyses are usually recovered from; the outlook is more favorable than in any of the other forms of paralysis.

Muscular dystrophies are also progressively unfavorable. A few patients have been reported as having recovered at least partially, under careful massage, electricity, and exercise; but this is certainly the exception.

Treatment.—While, on the whole, the prognosis is unfavorable as to recovery in these various forms of paralysis, with the exception of peripheral nerve lesions, still much can be done either to alleviate the existing conditions or to stay the progress of the disease. In the cerebral type the rigidity and contractures of the muscles can be lessened by massage and electricity, and the form most favorable is the galvanic current,

as often faradism may stimulate or irritate the muscles to increased contraction. Hydrotherapy, especially as carried out in some of the institutions at the various springs—as Virginia Hot Springs, Richfield—is very useful. In poliomyelitis the treatment of the paralyzed muscles should be long persisted in. Even a year after the onset, by manipulation of the individual muscles and electricity applied in the same particular manner, much can be accomplished; also apparatus devised to exercise the various muscles should be employed, or, when possible, the bicycle should be recommended. Deformities should be guarded against by appropriate apparatus. In the case of a child this should be made as light as possible, so as not to interfere with ordinary exercise. I have often seen appliances so heavy or inconvenient that they retarded rather than aided attempts at locomotion. Patience is required in this disease, and while we cannot usually hope to cure, we can accomplish much in cases of not too severe a type, which, if left to themselves, would rapidly pass into hopeless deformity. Certainly, in chronic poliomyelitis the above treatment faithfully followed out is often successful. Even in the degenerative and hereditary form of paralysis this care is of benefit. In peripheral nerve lesions, as soon as the acute stage is past, massage and electricity are of great value. I agree with many writers that probably the electricity has little if any influence in removing the disease in the nerve itself, but, as these diseases have a tendency to recovery, we are thus enabled to maintain the muscle in a good state of nutrition and prevent deformities, so that they are ready to respond to the nerve when the inflammatory process has subsided. The benefit of electricity in this disease cannot be denied, according to my experience; therefore, whatever its principle of action may be, it should be employed. I have not spoken of drugs in this connection, as my paper was not intended to take up that division of the subject. However, in all these forms of paralysis, with the exception of the cerebral type, strychnine is certainly of advantage.

RETROSPECTIVE THERAPEUTICS.

BY ALFRED K. HILLS, M.D., FELLOW OF THE ACADEMY OF MEDICINE, NEW YORK.

MELANCHOLIA TREATED BY SUBCUTANEOUS INJECTIONS OF ETHER.—Dr. R. J. Shepherd, of Pau, France, writes to the London *Lancet* as follows:—"Some remarks by Prof. Renault, of Lyons, on the prospective action of the subcutaneous injection of ether in uremia led me to try its effects in a case of brain trouble from uric acid. Twice before a similar attack had been accompanied and followed by deep melancholia. I did not indeed think of the melancholia in giving the drug (10 minims injected deeply into the buttock), but was surprised and pleased to find that it at once disappeared. I gave about six injections in about as many weeks and always with the same effect—it did not need to be repeated for the time. I feel sure that the method deserves a systematic trial, and need hardly say that if it

should turn out to be a discovery it will prove an enormous benefit to suffering humanity, more especially in commencing stages of melancholia, which so often leads to suicide; while superintendents of insane asylums may hope to increase their percentage of cures. We need not be surprised that such a remedy should produce such a result, seeing that melancholia seems to be, *per se*, purely a functional condition of the nerve cells, coming and going no one knows how, and leaving no appreciable trace of its presence. The utter harmlessness of the drug in such doses is largely in its favor."

EMPYEMA OF FRONTAL SINUS.

Treatment.—This seems to be an occasional sequel to attacks of influenza. Several incisions have been proposed for the purpose of emptying the cavity: one along the lower border of the supraorbital ridge, after pulling the integument forcibly upon the forehead, or this incision may be joined by one perpendicular to it along the base of the nose; or an incision may be made in the median line, 1½ inches from the base of the nose. The skin and the periosteum are then elevated; the sinus opened with a terepine, drill, or chisel; polypoid or necrotic tissue removed and the cavity thoroughly cleansed; the fronto-nasal duct may be enlarged by passing a trocar from the sinus into the nose, and a self-retaining drainage-tube inserted. The cavity is then kept free from secretions by irrigation with a mild antiseptic solution.—*Bryan (Jour. Amer. Med. Assoc.*, Feb. 26, '98).

In the Clinics.—Since Sinkler, of Philadelphia, pointed out the value of *ergot in paresthesia* the drug has been largely used in this condition. The method of administration in Dr. Spiller's clinic is by the fluid extract in doses of 15 drops, three times daily, for one week; it is then discontinued for one week, when, should the numbness and tingling persist, it is renewed for one week. Both sexes are alike favorably influenced by the remedy, the average duration of the affection being not more than three weeks.—*Reported by Charlotte C. West, M.D., in the Philadelphia Polyclinic.*

The Relation of Hysteria to Insanity.—Neff (*Physician and Surgeon*, March, 1897, p. 103) concludes a paper on the relation of hysteria to insanity with the following summary: 1. Hysteria is the result of degeneracy, presenting mentally and physically one or more of the stigmata of degeneration. 2. It conforms to a type of psychosis. Any form of insanity may be engrafted upon hysteria, producing the so-called hysterical insanity. 3. The primary delirium of hysteria may be independent of any sensory or motor complication. More often the emotional storm follows a distinct hysterical attack. 4. Hysteria may complicate insanity, showing an analogy to its occurrence in other diseases.

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF

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CURETTAGE OF THE UTERUS.

BY WILLIAM H. WATHEN, M.D., LL.D., OF LOUISVILLE, KY.

My chief assistant expected to have for our clinic to-day a hysterectomy for the removal of a large uterine myoma, but I have suggested that he substitute three cases badly in need of uterine curettage, for this operation is one that will be of much more practical importance to you than any of the major operations. But few of you will probably perform hysterectomies and celiotomies, but all of you ought to know how to curet the uterus after the most approved methods. With this knowledge you go into the professional world prepared to do a great deal of good to suffering women, relieving them of many of the most distressing symptoms that sometimes make them bed-ridden: and you may prevent the development of serious conditions outside of the uterus that would otherwise require celiotomy or hysterectomy for the removal of pus-tubes or pelvic abscesses. The history of the cases is as follows:

Case I.—This woman, aged 35, the mother of two children, has enjoyed good health until about two years ago. Since then she has been suffering intensely during her menstrual periods, which have been too profuse and have lasted too long. Not only has she suffered during her menstrual periods in the region of the uterus and in the pelvic cavity, but she has had intense pain in her back, head, and legs, and every reflex symptom that we can imagine. So intense have been these symptoms, and her abdomen so sensitive upon examination, that her physician, in a distant city, referred her to me, believing that celiotomy or hysterectomy would have to be performed for the removal of pus-tubes and the separation of extensive adhesions. When I examined the patient yesterday without anesthesia, I was not positive that the condition could be relieved without celiotomy, because an examination cannot be made satisfactorily with such an exceedingly nervous woman. I find, however, since she has been anesthetized, that the uterus is entirely movable, without adhesions, and there is no accumulation in the tubes or in the ovaries, and these organs, so far as I can discover, are in nearly a normal condition, but I find the uterus very much enlarged, and you see the foul, purulent matter that is running out of the os into the vagina, showing that we have a case of extensive endometritis that cannot be relieved without cureting, unless we subject the women to a very long and unnecessary course of treatment, and even then it is doubtful if a permanent cure could be brought about.

I wish to emphasize the importance of absolute cleanliness in these operations, for if you neglect this you had better not attempt this kind of sur_ery: otherwise, instead of curing your patient of the edometritis, you will find that in a few weeks her condition will be worse than before the operation, and probably in a few months you will find the uterus bound down, with one or two pus-tubes, and possibly a pelvic abscess. You must observe cleanliness in this operation as carefnlly as in celiotomy or hysterectomy. So now you will see me, with a small brush having a long handle, and with sterilized cotton, wash the vagina from the vulva to the uterus, using soap and hot water, until the parts are aseptic. Having completed the washing process, we will irrigate the vagina with a 1:1000 bichlorid-solution before dilating the uterus. All women upon whom I operate are thoroughly bathed and the vagina irrigated before they are brought into the operating-room, but no vagina can be made clean except by thorough washing, such as this woman has had, and this must not be left to the nurse, and should always be done just before beginning the operation.

I use a Wathen's medium-size dilator, because dilatation is not difficult. With a sharp spoon-curet I will scrape away all the diseased tissue of the cervical canal, and then from the body and fundus of the uterus, being careful to leave no point of disease. I will be particularly careful to carry the curet into each cornu of the uterus so as to remove the diseased tissue at the entrance of the Fallopian tubes, for at these points we generally find the disease even more extensive, and if not removed it would further endanger the tubes. You must observe that I am using the curet very gently, but still with sufficient force to remove the structures down to healthy tissue, which can be judged by the sound and by the sense of touch that is imparted to the hand through the curette.

The cureting having been completed, we will irrigate the uterus with a 1:3000 bichlorid-solution, using an irrigation-tube that allows the water to flow into the vagina without obstruction: otherwise it is possible that some of it might be forced out through the Fallopian tubes into the peritoneal cavity. I now tampon the cavity of the uterus gently with iodoform-gauze, although I am not positive that this will be of any real value. I find, however, that patients tamponed get well, but cases that I have treated without tamponing also get well, and it is believed by some of our most distinguished operators that tamponing is not necessary; even some operators do not irrigate the uterine cavity, but wipe it out with sterilized gauze wrapped on a pair of dressing-forceps. There may be instances in which the patient will do better by the use of irrigation and tamponing, and especially is this true if there is a tendency to excessive hemorrhage, or if the woman has lost so much blood before the operation that you do not wish her to lose any more.

The success in curing the patient of the infection depends not only upon the thorough removal of all diseased edometrium, but upon preventing a reinfection, which often results because of ignorance of the doctor or nurse. The vagina should be irrigated twice daily with bichlorid-solution 1:2000, and if the case does not progress favorably, the uterus should also be irrigated at least once daily. In using irrigation the hands

of the nurse, the irrigation-tube and everything used should be aseptically clean, and we should not use a bulb-syringe. The bulb-syringe is always septic, and it is almost impossible to prevent this, whereas the douche, when you use a gum bag or the glass vessel, is kept aseptic with but little care. If this be neglected I dare say that many of the cases upon whom you operate will be reinfected very soon because of a septic syringe. Not only do I advise you not to use the bulb-syringe in these cases, but to never use one for any purpose except to give rectal enemata, and even here the douche is preferable.

The nurse will obey instructions, and remove the gauze within from 24 to 48 hours. The patient will be kept in bed for 4 days, but be allowed to pass her water, and her bowels must be moved within 48 hours. After leaving the bed she should remain quiet for a few days, gradually walking, for 8 or 10 days, when she will be able to return to her home. These patients could get out of bed as soon as the effects of the anesthetic pass off, and could walk about the hospital, and, while there might be instances in which they would do just as well by following this method, I do not think it is safe, and advise against it. I feel positive that this patient will be entirely relieved, and that within a few weeks she will suffer no pain, and when her menstruation returns it will be normal as in past years.

Case II.—This patient is a young woman, aged 18, unmarried, who has borne no children, and says she has never been pregnant. I see, however, that the conditions indicate that she has been having sexual connection, and it is probable that she has had one or more miscarriages in the early months. I also infer, from the imperfect history obtainable, that she has had gonorrhea, and that she has not been treated regularly or successfully for any trouble in the past. She has a profuse leucorrheal discharge that is very irritating to the vulva, and is also offensive. She has for two years suffered with severe dysmenorrhea, and has not been able to work. I can find no disease of the ovaries or tubes, nor adhesions about the uterus, so that I feel the only treatment indicated is cureting. She has been prepared just as the preceding patient, and the vagina will now be treated after the same fashion. I will dilate the uterus also with a medium-size dilator and curet as in the first case. You will observe that this patient, just as in the other case, has lost but little blood; also that I have used no speculum in either operation, though I thoroughly expose the vagina so that we plainly see the cervix. The cervix is caught up by a Pean forceps, which holds the uterus firmly, with but little traumatic injury, and brings the cervix plainly in view. I do not see why nearly all operators use a speculum in cases of this kind, because it makes the operation more difficult, more prolonged, and even less perfect, and does no possible good. The argument that not using a speculum requires us to bring the uterus too low has no weight, because, in the first place, we do not bring it down low enough to cause any trouble; but if pulling the uterus down considerably will cause trouble with the ovaries or tubes, then there would be a condition of these organs that would necessitate their removal, and that would not be a case for cureting only. In operations for laceration of the cervix I likewise use no speculum.

and have never had any trouble result from this method of operating. It simplifies the operation so much, that after the vagina has been cleansed, and the uterus has been cureted, the experienced operator, if he uses catgut for suturing the laceration, can denude the surfaces and untie them within five minutes, which you have frequently seen me do before the class. The after-treatment in this case will be the same as in the other patient.

Case III.—This patient, a woman, 30 years of age, unmarried, has had no children, but I think has had several miscarriages, and I believe she has had gonorrhœa. I cannot speak positively about this, because the history of this case, as in many others who come before us, is not satisfactory, the patient either concealing something, or not being able to give us a satisfactory history of her condition at different times. For a long time she has had a profuse leucorrheal discharge and painful and profuse menstruation: the uterus is enlarged to twice its normal size, and I can feel in its walls a myomatous growth, not large enough, however, to indicate the necessity for hysterectomy, and she is unwilling that the uterus shall be removed at this time. It may not be necessary to remove it at any time, because dilatation and cureting very often bring about a condition that prevents any symptoms from the tumor, and it may grow no more. We never can say exactly what will be the course of a myomatous tumor, because there are cases in which the tumor has not increased in size for many years; in fact, has never grown large enough to cause any trouble. There are other cases in which the tumor remained nearly stationary in size for many years, then grew rapidly to large proportions. There are other cases in which from the beginning the tumor grew rapidly. We will watch this case, and if the tumor begins to enlarge rapidly, or causes any serious trouble, we shall advise the patient to have it removed.

We have now dilated and cureted the uterus just as in the other cases. We will irrigate and tampon also, the tampon in this case being more indicated than in the others, because the tumor and the enlarged uterus are likely to bleed more than in either of the other cases.

While I will not say that these patients will remain well, or will all recover from the disease for which we have just operated, I believe, if they will observe the directions given, that they will be practically well within a few weeks, and will remain so unless they expose themselves to conditions that will bring about a reinfection. Let that be as it may, there is no other method known to the surgeon or physician comparable to the plan that has been followed in the treatment of these cases Within a few minutes we do more to remove the disease, and remove it permanently, than we formerly did in as many months by the old-fashioned applications, etc. If they are not permanently relieved, or if the disease returns because of the fault of these patients, another operation may be performed without causing much pain or subjecting them to serious danger, expense, or loss of time.

NOSE AND THROAT.

IN CHARGE OF

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EARLY DIAGNOSIS OF A CASE OF CANCER OF THE LARYNX.

Drs. Clark and Harrington state that slight continued huskiness or hoarseness in a patient beyond middle life is a suggestive symptom. If due to a growth in the larynx it will, probably, be found to be malignant. The dyspnœa and dysphagia will depend upon the location of the tumor. There is nothing characteristic in the early stages of laryngeal carcinoma, and a negative microscopic examination should not be too much relied upon. Prognosis without operation is fatal within two or three years. Prognosis after treatment depends largely upon the time when the operation is done—the smaller the growth the less radical the operation required, and the greater the probability of success.

Czwielitzer (Beitrage zur Klin. Chir., 1896), in analyzing his cases states that the proportion of partial resection is larger, showing that the operation is done earlier than formerly, there being a falling off in total extirpations, owing to the fatal results of this operation. Of thirteen cases reported by this author nine were partial, two of half the larynx, and two total. Five cases, all of partial resection, were living at the time of this report, being six weeks, one and a half, five and eight and one-half years, respectively, since operation.

Most writers have little faith in the intralaryngeal removal of these growths. Frankel, however, is a staunch and able supporter of this method, and he reports nine cases operated on by himself with five cures. Of twenty-two cases collated by Hansberg and Sendziak there were twelve cures.—*Boston Med. and Surg. Jour.*, February, 1898.

PLUGGING OF TRACHEA BY CASEOUS GLAND.

A boy, aged eight, was admitted to hospital in a semi-conscious cyanosed condition, evidently suffering from some obstruction to his respiration. There was no history of foreign body getting into the air passages. Chloroform was administered, giving some relief. Intubation with a catheter did not benefit the symptoms, but evidently indicated some ob-

struction a considerable way down the windpipe. Tracheotomy was then performed, but before its completion the child had ceased breathing. Aspiration with a long india-rubber tube was then tried, but yielded no good result. A long tube was then passed down for the purpose of irritating the mucous membrane of the trachea and bronchi, whereupon the child gave a deep inspiration, and again ceased breathing. The heart beats were now becoming smaller and much more rapid, but artificial respiration, the galvanic battery, and this catheterization were nevertheless continued. Suddenly some cheesy-looking matter, about half the size of a hazel nut, was coughed up, after which the child began to breathe freely, and made an uninterrupted recovery, although on more than one subsequent occasion a little of this cheesy matter was coughed up. This cheesy matter proved to be part of a caseous bronchial gland, which had evidently ulcerated its way into the trachea, about the bifurcation.—Longbottom, in *The Lancet*, March 19, 1898.

THE INFLUENCE OF DISEASES OF THE NARES AND PHARYNX ON AURAL AFFECTIONS.

In considering the predominating influence nasal and pharyngeal disease exerts upon middle-ear affections, the author bases the following conclusions upon a study of 600 cases of middle-ear involvement:

1. Sclerosis of the middle-ear is usually the result of previous nasal or pharyngeal disease.
2. Otitis media suppurative is a common and frequent result of acute or chronic naso-pharyngeal disease.
3. Fully seventy-five per cent. of all forms of middle-ear disease will show, on examination, or give a history of naso-pharyngeal disease.
4. Sixty-four per cent. of tympanic affections are coincident with pathological changes, either in the nares or pharynx, or both.
5. Sclerotic or atrophic changes of the naso-pharynx are of little consequence in the production of deafness as compared with chronic hypertrophy or any morbid change producing congestion of the nose or throat.
6. Of nasal affections, hypertrophy of the turbinals is the most potent factor in the production of aural disease. Deviated septum and exostoses influence the tympanic cavity by producing changes in the atmospheric pressure.
7. Aural affections are more frequent in hypertrophies of the post-nasal space or naso-pharynx than in either pure nasal or pharyngeal disease.
8. The effects of passing diseases of the nares or pharynx in the production of middle-ear disease are of much importance.
9. General diseases, such as measles, with local naso-pharyngeal manifestations, exert a marked causal influence in the production of middle-ear disease.
10. To a great extent the successful issue of aural disease depends upon naso-pharyngeal disease.—Somers, in *Univ. Med. Mag.*, Vol. ix., No. 11.

PARACENTESIS OF THE DRUM MEMBRANE IN MIDDLE-EAR DISEASE.

Dr. St. John Roosa advocates conservatism in the matter of paracentesis in acute middle-ear disease. This is properly and safely undertaken only where there is a bulging membrane, and when the use of leeches and hot water have failed to give relief. The traumatism of a free paracentesis in a subacute case is grave, and unnecessary paracentesis in an acutely inflamed membrane is a more serious procedure than simply opening into the mastoid cells.—*Medical Record*, April 9, 1898.

INTUBATION WITH IMPROVED INSTRUMENTS.

The claim is made that these instruments simplify the operation without in the least changing the method as devised by the late Joseph O'Dwyer.

A troublesome feature of the old instruments is that one needs two separate instruments for either introduction or extraction of the tube. The introducer is a very complicated instrument, and each of the six tubes requires an obturator of its own, which become sometimes very difficult to manage during the act of introduction, as everybody knows, who has had experience with them. Among the many modifications which have been made from time to time, the greatest advance was made in the instrument of Ferroud; but this is rather complicated, as it consists of seven distinct parts; yet it combines the introducer and extractor into *one* instrument. On the principle of this instrument, an introductor and extractor combined has been constructed by a Chicago firm, which surpasses all former attempts at simplifying these instruments.

The instrument which serves as introducer and extractor has at its distal extremity two serrated beaks about two inches long. They are opened by a pressure with the thumb on the upper portion of the lever and are automatically held open by a ratched arrangement, while pressure with the index finger upon the lower end of this ratched bar relieves it and closes the beaks. By *firm* pressure the beaks hold the tube *immovably*, so that it cannot slip off nor turn during an attempt at introduction or extraction.

This whole instrument consists of only two parts, the handle with one beak and the lever and ratched arrangement with the other beak which two parts are readily taken apart by screwing the thumb screw towards the right. This screw has the further advantage of being so fastened to the instrument that it cannot be removed from the shank of it by unscrewing it in either direction, and therefore cannot be lost at a time when such a loss would frequently cause a very disastrous delay.

The tubes also have been slightly modified. While the general configuration of the tube is an exact reproduction of the original O'Dwyer tube, the top of it has been slightly changed, in that the opening has received a funnel shape, slanting from the edges of the rim of the tube toward the center. This facilitates the introduction of the beaks greatly,

when the tube is in the larynx, inasmuch as it allows the beaks to glide from any point of the rim almost automatically into the opening, and what this means can be appreciated by those who have had experience with the old extractor. Another change that the tubes have received is that the lower end has been cut off at an angle of about 45°, slanting from right to left. This facilitates the passage of the tube between the vocal chords, and at the same time will prevent injury to the tissues, as the knob of the obturator, which in the original tubes closes the opening of the tubes, is absent in these tubes. This absence of the obturator and its knob has the additional advantage that air passes through the tube along the side of and between the beaks of the introducer *during and immediately after introduction*, a fact which contrasts with the absolute obstruction to breathing while the obturator of the old instrument is in the tube. Therefore, with this instrument the operator need not be in such a hurry to introduce the tube and withdraw the obturator.

Henrotin's mouth-gag is furnished with this set of instruments which differs from the one usually found in the set of O'Dwyer's instruments. It consists of a wedge-shaped mouth-piece, which is fastened to two steel rings by the aid of a curved bar. In using it the assistant puts two fingers of his left hand through the rings, places the wedge-shaped mouth-piece, which is well covered with rubber tubing, between the left molars, and keeps the left hand firmly pressed against the cheek of the patient. In this manner he not only keeps the mouth opened, but also steadies the head of the patient at the same time.

The old tubes can be used with this new introducer and extractor as well as the new tubes.—Max Thorner, in *Cincinnati Lancet-Clinic*, February 19, 1898.

Antitoxin in Diphtheria.—Prior to the introduction of anti-diphtheritic serum, the mortality from diphtheria at Harper Hospital, Detroit, averaged for a number of years 40 per cent. According to the thirty-fourth annual report of the hospital authorities, as published in the February number of the *Harper Hospital Bulletin*, page 73, 141 cases were treated at the hospital during 1897, with the following results:

	Cases.	Deaths.
Ordinary diphtheria	115	1
Laryngeal diphtheria	26	6
	141	7
Excluding two cases moribund on admission	2	2
	139	5

Mortality under antitoxin treatment 3.6 per cent.—*Therapeutic Notes.*

PAEDIATRICS.

IN CHARGE OF

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GONORRHŒAL OPHTHALMIA IN THE NEW BORN.

Pædiatrics of June 1st, 1898, condenses a paper by Pflüger (*Coresp. f. Schw. Ærzte*, 1897), which may be further abstracted as follows:

TREATMENT.—Nothing new is equal to the old nitrate of silver, the chief modification of the use of which lies in the less strength of solution employed. Solid stick may never be used, even by the physician.

1. For cleansing purposes use 4% boric acid, warm, in water or normal saline solution. Use it copiously every half-hour or hour, day and night, and to keep edges of lids from cohering use pure vaseline, with four per cent. of bismuth sub-nitrate.

2. For the initial stages of an uncomplicated case. not more than four or five days, use ice-compresses to the eyes. Remember danger of sloughing from cold after the first stage of acute œdema is over, and suppuration and membrane formation in conjunction are established. Change then to heat, best as hot boric acid compress.

3. After stage of suppuration has begun, and brawny red infiltration and œdema have begun to subside, begin use of silver nitrate. Start with 2 to 3 per cent. solution, and see that it does not increase the œdema and inflammation. Pass on then gradually to ½, 1 or 2 per cent. solution, which should be applied, at the height of suppuration, two to four times a day. As suppuration lessens, restrict the application to, say, once daily, and resort again to the weaker solutions.—J. T. F.

ACETANILID AS A SURGICAL DRESSING.

The recently introduced employment of acetanilid as an antiseptic has led to some accidents. Its use as a dressing for the cord has caused serious poisoning and collapse in the infant, and in cases of extensive burns or scalds it has been repeatedly the cause of great anxiety to the surgeon who used it as a dressing, from the extreme cyanosis, sub-normal temperature, drowsiness, and great heart weakness. Respiration does not seem

to be much affected. The cyanosis has always been attributed to impaired æration of the blood, circulatory or respiratory in origin, and to the breaking down of the red blood corpuscle, with conversion of hæmoglobin to methæmoglobin. A writer in the *N. Y. Med. Journ.*, Vol. LXV., p. 708, says that he has found the cyanosis to be due to the liberation of free aniline in the blood, which soon disappears by elimination in the urine and sweat. The peculiar tint, and the disproportion between the severity of the cynosis and of the subjective symptoms, may well be due to some such cause. It is necessary to remember the danger of absorption from a raw surface.—J. T. F.

BRONCHOPNEUMONIA IN CHILDREN.

The custom of applying hot poultices to the chest in cases of bronchitis and bronchopneumonia in children has fallen into disrepute. The use of the bronchitis kettle, too, is almost an event of the past. The late Sir Benjamin Ward Richardson (*Pediatrics*, March 1, 1898) was one of the first to inveigh against its healthful properties, and in his indictment of it contended that the steam from it condenses on and saturates everything, and claimed that nothing but harm can result from its use. In fact, he remarked that its name of bronchitis kettle accurately describes its hurtful effects. With regard to poultices, Dr. Haviland Hall says: "To watch a small child with extensive bronchopneumonia fighting for breath, and then to further hamper its efforts by ordering a poultice weighing about a pound, can scarcely be regarded as a rational proceeding." Many physicians report the excellent results obtained with children by the application of olive oil to the chest and between the shoulders in complaints of the respiratory organs. Dr. Buxhamer, of Vienna, employs baths of a temperature of from 18° to 22°C. (64° to 72°F.) in the treatment of pneumonia in the young. He asserts that children present but little resistance to reduction of temperature. As a precaution against collapse the bath ought not to last longer than five minutes, and is on no account to be continued if the child shows signs of shivering. In *Le Nord Méd.* of December 15, M. Desmons upholds the use of the warm bath treatment of bronchopneumonia advocated by Professor Lemoine. His experience of the beneficial results of this method of treatment are remarkable, and he says that he not only rarely loses a case from this complaint, but by giving the baths at the first signs of lung symptoms he is able often to nip an attack in the bud. In his opinion it is advisable to give the baths every three, or even two hours, if the case is a bad one. In some instances the addition of mustard meal is said to render the bath more efficacious. There is little doubt that the old-time treatment of heavy poultices and bronchitis kettles will soon, even in the most conservative countries, be relegated to the limbo of the past.—Dr. Abt., in *Medicine.*

[While agreeing in the main with these sentiments, we still think that we have seen relief follow the poultice, especially in the early stage of

broncho-pneumonia, while the child is still strong, and is evidently breathing short from the pain, probably pleuritic, which so often accompanies the disease. The truth probably lies here, as usual, in the golden mean, and the abuse of the poultice should be no reason for its being entirely discarded.—J. T. F.]

The leading article in a recent number of Clark Bell's *Medico-Legal Journal* is a diatribe on vaccination. It is written in the tone of a fretful old woman, and is marked by all the wildness of statement which characterizes most such articles. We are told that small-pox, instead of disappearing, is falling with increased virulence upon all the vaccinating nations with each successive epidemic. This is indeed a surprise to the present generation of physicians, large numbers of whom have never seen a case of small-pox. Statistics are used in a manner to suggest the thought that the author may be attempting to demonstrate the proposition that nothing can be made to lie like figures. We find this interesting statement: "Unfortunately, most of the medical societies of New York are still so benighted and so bigoted that they will not permit the subject to be discussed at their meetings." This is a great and well-deserved compliment to the New York societies.—*Arch. of Ped., June, 1898.*

[We were once foolish enough to subscribe for the *Medico-Legal Journal*, but were so "bigoted" as to find it necessary to "stop the paper" on account of its extraordinary vagaries.—ED.]

NOTICE.

The editors of the Pediatric department of THE CANADA LANCET earnestly request such of our many readers who have had any cases of Tetany or Tetanilla in practice, to send full notes of such cases occurring in infants and young children, supposed etiology, treatment and results. In fatal cases post-mortem appearances, macroscopic and microscopic.

It is the wish of the LANCET to collect as many cases as possible, to arrange in groups, and possibly add some small quota to the very scant literature on this rare and interesting disease.

Kindly address any communications to Dr. Allen Baines, 194 Simcoe St., Toronto.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF
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H. C. PARSONS, M.D., 97 Bloor Street West.

THE FINER NERVE-CHANGES IN INFANTS SUFFERING FROM GASTRO-INTESTINAL DISORDERS.

E. Muller and Manicatide, *Deutsche medicinische Wochenschrift*, March 3, 1898) have examined the cells in the central nervous system of seven infants under three months of age who had suffered from gastro-intestinal diseases. In five of the cases there had been more or less high fever, the other two had been *afebrile*. In all of the seven cases changes were found in the cells of the brain and of the spinal cord. The changes consisted, in the mildest type, in an irregular distribution of Nissl's bodies. Next in severity was the gradual solution of these, which affected the entire cell-body uniformly, or the parts about the nucleus, or the periphery. The solution is accompanied by a diminution in size and haziness of the Nissl bodies. Occasionally they are also enlarged and darker. In advanced cases they disappear entirely and a fine fibre net-work appears. Finally the cells lose their form, become indistinct, and the processes disappear. The nucleus and the nucleolus are often displaced. The latter is enlarged and the former is darker and uniformly stained. The presence or absence of fever seems to have no special influence. The changes just described belong to no special type and resemble those which have been found in experimental intoxications and infections.—*Univ. Med. Mag.*

ETIOLOGY OF CANCER.

Roswell Park (*American Journal of the Medical Sciences*, May, 1898) gives a *resume* of this question, in which especial reference is paid to the parasitic theory. He quotes largely from the papers of Sanifelice and Roncali, and states that they have discovered a fungus belonging to yeasts as the active agent. This germ belongs to the blastomycetæ. They reproduce themselves by budding, and have the form of young cacti. It may be stated positively, he says, (1) that some of these germs may be isolated by culture methods from certain carcinomata and sarcomata; (2) that they belong among the yeasts; (3) they will produce tumors in animals by injections under certain precautions; (4) from these tumors further cultures can be made with which inoculation can be practised.

He also states that Gussenbauer has been able to obtain from seven cases of melanosarcoma an anaerobic coccus, which grows in ordinary culture media.

ANURIA.

Guisy (*Progres Medicale*, February 5th, '98), reports a case of hysterical anuria, with elimination of urea by other organs than the kidneys,

lasting for 12 days. The patient, a woman of 39, had been subject to hysterical attacks for nine years. During the attack reported the patient was troubled with continuous vomiting and severe nasal catarrh; a yellowish fluid of urinous odor was discharged continually, in drops, not only from her nose, but also from her ears and eyes. Small quantities of the fluid, collected and submitted to examination, were found to contain urea, mucus and some pus-corpuscles. The vomited material also contained urea. The patient suffered no serious disturbance of health as a result of the condition.—*Philadelphia Medical Journal.*

A case of anuria quite as remarkable as the above was reported by Dr. A. T. Rice, Woodstock, Canada, before the Ontario Medical Association, June, 1898. In Dr. Rice's case, the patient, a woman aged thirty, voided thrice daily a large quantity of urinous fluid, as much as a gallon at a sitting, from the anterior surfaces of the legs. The fluid was of an amber color, specific gravity of 1010, urinous odor, contained uric acid, and became ammoniacal on standing. It contained neither albumen nor sugar. The fluid simply oozed from the skin, which showed neither abrasion, discoloration nor pigmentation. After a few months the condition gradually passed off, and the patient regained her usual health.

These cases are interesting, as illustrating the community of action possessed by different surfaces in excretion—a relic of the condition found in the lowest forms of animal life, where substances are excreted indifferently by the whole surface of the body. The latter also shows the extent to which compensatory function between the kidneys and the skin is possible. *H. B. A.*

NEPHRITIS OF MALARIAL ORIGIN.

At the thirteenth annual meeting of the American physicians, Dr. Wm. S. Thayer, of Baltimore, read a paper with this title, in which he referred to the frequency of albuminuria in malarial fever. (*Medical Record.*) In looking over the statistics and in his own cases he had found that a large proportion of cases of malarial fever had albuminuria and casts, but principally the cases of æstivo-autumnal fever. Of seven hundred and fifty-eight cases of malarial fever there were albuminuria in three hundred and twenty-one, and casts in one hundred and twenty-one. Albumin was present in nearly one-half the cases. He had had nineteen cases of acute nephritis, of malarial origin. He had found in general that his own statistics agreed largely with others he had collected, except in some few cases. In scarlet fever there was, of course, a certain number of cases of albuminuria and casts; also in diphtheria and typhoid fever. Albumin was probably present in about one-half the cases of scarlet fever, and malaria seemed to be the cause of more cases than was generally supposed, but not so often as in yellow fever, and for this reason we could not place too great reliance on the presence of albumin in yellow fever. In one hundred and fifty-two cases of nephritis, seven were tertian, ten æstivo-autumnal, and three of varied type. There were thirteen recoveries and four deaths. Nine cases were doubtful. The speaker also gave statistics of the age, sex and color in these cases. He thought there was a possible etiological relation between nephritis and malarial infection.

The Canada Lancet

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Editorial.

INTERPROVINCIAL REGISTRATION.

The following is the full text of the report of the Committee appointed in Montreal last year, which was presented to the Dominion Medical Association at its meeting in Quebec last month:

The report was highly favorable to the project in every respect, and not only was it so, but it suggested admirable bases for the rapprochment, the report being essentially in the following sense:

I. There shall be accepted for matriculation:—A B.A. from any recognized university; or in lieu thereof, First-class or Grade A Provincial certificate in any of the Provinces for teachers' license; or an examination in the following branches, which shall be compulsory and conducted by the various Councils of the Educational Departments of each Province, viz.:

1. English grammar, composition, literature, and rhetoric.
2. Arithmetic, including vulgar and decimal fractions, and extractions of the square and cube root, and mensuration.
3. Algebra to the end of quadratic equations.
4. Geometry. First three books of Euclid

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For years before we ever heard of Taka-Diastase we frequently received letters from prominent practitioners throughout the Dominion, urging the need of a powerful and reliable diastase in the conditions which unite to form the

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is the condition of the woman who has been relieved from some functional disturbance to her state before relief. Don't you know, Doctor, that there are few cases that pay the physician so well as those of women—and the Doctor that relieves one woman, lays the foundation for many more such cases—all women talk and your patient will tell her friends ASPAROLINE COMPOUND gives relief in all cases of functional disturbance—Leucorrhœa, Dysmenorrhœa, etc., and in the cases it does not cure it gives relief. We will send you enough ASPAROLINE COMPOUND—free—to treat one case.

DR. BRETON, of Lowell, Mass, says :

" I wish to inform you of the very satisfactory results obtained from my use of Asparoline I have put it to the most crucial tests, and in every case it has done more than it was required to do. I recommend it in all cases of dysmenorrhœa."

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Parsley Seed - - - -	Grs. 30
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Asparagus seed - - -	" 30
Gum Guaiacum - - -	" 30
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IN OVARIAN CONGESTION, HYSTERALGIA, DYSMENORRHŒA ETC.
Crush—Take with Water or Whisky.
ANTIKAMNIA AND CODEINE TABLETS.
(4¾ gr. Antikamnia ¼ gr. Sulph. Codeine.)
IN LARYNGEAL NEUROSES, BRONCHIAL AFFECTIONS,
PHTHISICAL COUGH AND GRIPPAL CONDITIONS.
Slowly dissolve Tablet upon the tongue.

5. Latin. First two books of Virgil's Æneid or three books of Cæsar's Commentary, translation and grammar.

6. Elementary mechanics of solids and fluids composing the elements of statics, and dynamics, hydrostatics, and elementary chemistry.

7. Canadian and British history, with questions in modern geography.

8. Translation and grammar of any two of the following subjects, Greek, French, and German.

9. In lieu of the above we also recommend that any student presenting a certificate from the professors of any standard or approved university in Her Majesty's Dominion, of having completed a course of said university, be accepted in any of the provinces of Canada for matriculation and registration.

Fifty per cent. of the marks in every subject shall be required for a pass and 75 per cent. for honors.

II. Professional Education. (a) The curriculum of professional studies shall begin after the passing of the matriculation examination and registration, and shall comprise a graded course in the regulation branches of four yearly sessions of not less than eight months in each year.

(b) The subjects to be Anatomy, Physiology, Chemistry, Materia Medica, Therapeutics, Practical Anatomy, Histology, Practical Chemistry, Pharmacy, Surgery and Clinical Surgery, Medicine and Clinical Medicine, including Diseases of Eye, Ear, Throat and Nose, Mental Diseases Obstetrics, Diseases of Women and Children, Medical Jurisprudence, Toxicology, Hygiene, Pathology, including Bacteriology.

(c) That at least 24 months out of the graded four years of eight months each be required for attendance on hospital practice.

(d) That proof of attendance on not less than six cases of obstetrics and post-mortem examinations be required.

III. Examinations. All candidates for registration in the various Provinces, in addition to having fulfilled the foregoing requirements, shall be required to undergo examination before examiners to be appointed in each of the Provinces by their representative councils.

Fifty per cent. shall be required for a pass, and 75 per cent. for honors.

IV. Your Committee recommend that as soon as the foregoing basis of agreement is ratified by the councils of the various Provinces, each council shall endeavor to secure legislation to authorize the carrying out of the foregoing preliminary and professional curriculum, and to embody the following to secure a Board of Examiners for a Dominion qualification, viz.:

"That so soon as the various councils of the Dominion shall establish an Examining Board for the Dominion, conducted by examiners appointed by the Medical Councils of the several Provinces, those candidates passing a successful examination before the said Board and obtaining a certificate to that effect, shall be entitled to registration in the several Provinces of the Dominion on payment of the registration fee, providing they are not guilty of infamous or disgraceful conduct in a professional respect."

Your Committee desire to recommend that efforts to ascertain the practicability of Federal legislation leading to the establishment of a

central qualification which will place the profession in Canada upon an equal footing with that of Great Britain, and that Dr. Roddick be authorized to take the necessary steps in the matter.

We further recommend that this Association shall appoint a Comm t-tee who shall consider and recommend the details as to the number of examiners to be appointed, the method of conducting examinations, the fees to be charged and other necessary details to bring the aforesaid scheme into active operation, which details the officers of this Association shall with the foregoing send to each of the respective councils for approval.

The Committee who had the matter under advisement were: Dr. MacNeill (P.E.I.), Chairman; Doctors Marcil, Chas. Parke, Marsolais, Roddick (Quebec); Muir (Nova Scotia); Williams, Thorburn, Mullins, Wright (Ontario).

Dr. Ahern moved that the following Committee be named to strengthen Dr. Roddick's hand before the Government: Doctors MacNeill, P.E.I.; Muir, N.S.; Walker, N.B.; Marcil, Quebec; Bain, N.W.T.; McKechnie, B.C.; Thornton, Manitoba; Williams, Ontario. This resolution also acknowledged the Committee's services and was unanimously adopted without discussion.

Dr. Grondin moved that type-written copies of the report be sent to the Registrars of each Province to be laid before their Colleges, and that answers thereto be requested in order to feel the sentiment of the country on the subject.

THE MEDICAL PROFESSION AND THE MODE OF ENTERING IT.

This month will witness the reopening of our ten medical schools, and the return of our fifteen hundred odd students of medicine to their winter tasks.

Those who have already embarked upon a medical course are sounding its depths of difficulty for themselves, but a word may be in season to those who are freshmen.

"The young man entering the medical profession should consider well whether he is suited by mental and physical constitution for an arduous calling.

"Unless a man have a distinct leaning to scientific studies, and unless he be imbued with a belief in the sacred nature of the duties which he will have to discharge towards his patients, he would do better to choose some other walk in life.

"The rewards of the profession, whether measured by social distinction, or by the pecuniary standard, are not great. The relation of the medical profession to the State and to the public has improved and will go on improving, but the recognition afforded to it is still far below that to which it is entitled by the services it renders.

"We read sometimes in the papers of the considerable fortunes left by the deceased members of the medical profession, but to gain riches in the practice of medicine is extremely uncommon, and no man, not even the most able and industrious, can promise himself that he shall obtain wealth;

indeed the bare truth is that the majority of us find the struggle for a competency severe."

These, from a British contemporary are wise words, and should be pondered by every student, new as well as old.

It has always appeared to us that the present tendency of education, at least in Ontario, was to cultivate the youth as we do our cucumbers, in hot beds, forcing them on in every way until they are pitch-forked into the professions by the very process, instead of reaching these by the process of natural selection This does not tend to make the present medical student ideal—a thing of mushroom growth rarely is—and many of them bear throughout life the marks of this hasty, ill-digested preliminary training. High though the standard of matriculation is, it does not secure that thoroughness and breadth of foundation that is so needful, nor would the further raising of the standard be more effectual; what is needed is less cramming, less forcing, fewer subjects, and the *mastering* of these few. Every reader of medical examination papers is struck by the bad spelling, and worse English, exhibited, and yet these do not debar the candidate in any degree, so long as he knows his subject, for once he passes his matriculation examination he may mis-spell every word at pleasure. The reader of the original articles in many of the leading medical journals has his sense of harmony continually jarred by these results of faulty primary training.

It therefore behoves the intending medical student to refrain from cramming his matriculation work so as to hasten his entry into medicine, nor is he less foolish if he delay completing his matriculation till after beginning medical work.

We would like to see the medical student acquire all his knowledge of Chemistry, Physics and Biology outside of medical colleges. This work should be done in the high schools or the universities, and be disposed of by examination before entering in the purely medical training. Anatomy and Physiology are absorbing and extensive enough subjects for both of the primary years.

Could not our useless "fifth" year be employed in this way?

Editorial Notes and Clippings.

BUTTERMILK.

A prescription of buttermilk might be rejected on account of its simplicity, but with some patients it will be considered very grateful. Its therapeutic value ought to be considered, and it may be given in many cases as a food, in some as a relish, and with others as a means of cure.

Papers have been written upon it, one by Henry D. White, M.D., in the New York *Medical Journal*, in which he relates a case of Bright's disease, in which after the ordinary remedies no relief was obtained. The patient finally, of her own solicitation, used buttermilk with the happiest results. In the same journal another case of Bright's disease,

with phenomenally large quantities of albumen, in which iron, pilocarpin, jalap, and other drugs were given. The patient began trying buttermilk; two quarts a day. Its effects being marked, the quantity was increased finally to six and eight gallons a week, with diminution in the quantity of urine passed. Constipation and headache invariably followed upon withdrawal of the buttermilk. An examination of the urine made one year and nine months after the first observation revealed the fact that minute quantities of albumen were still present.

Buttermilk may be used for its laxative and diuretic properties. It has been used with benefit in cystitis, and in all diseases of the urinary organs where soothing mucilaginous drinks are indicated, where an increase of the flow of urine is desirable, and to soothe inflamed and congested mucous surfaces.

Again, in affections of the digestive organs buttermilk may be advantageously given. Dr. S. M. Ward says (*Therapeutic Gazette*), "where there are eructations and vomiting, where there is atrophy of the peptic gland, in that condition known as 'sick stomach,' vomiting of peritonitis, vomiting of pregnancy, etc."

Dr. Ward says when buttermilk is to be used therapeutically it should always be freshly prepared. This is not in exact accord with my experience. I have had cases when it acted better when it was a week old or more. The whey from old buttermilk, where the caseine is entirely eliminated, has been a good remedy in many cases.

The whey from fresh buttermilk in cases of cholera infantum, made ice-cold, will often do well in checking vomiting and diarrhœa, as well as nourish the patient when other things have failed. It should be given in small quantities, repeated often in such cases. In some cases it is better tolerated by making it alkaline by the addition of bicarbonate of soda.—*Dietetic and Hygienic Gazette.*

It must be borne in mind that buttermilk is properly the residue of cream, from which after souring the butter has been extracted by churning, not by the more scientific creamery methods. What is sold as buttermilk in the cities is really the ordinary milk turned sour from too long detention in the retail milk dealer's shop, and after curdling, the curd completely broken up by agitation. This compound has no fat, may be foul from decomposition, and should not be named in the same day with the fragrant drink of the country with luscious butter particles floating in it.—[Ed.]

HYPNOTISM.

I commend to the profound pathologists and the "researchers in blood" who believe in hypnotism as a therapeutic measure the recent statement regarding a subject in *Modern Medicine* as follows:

"Professor Charcot had certainly as good an opportunity to judge of the value of hypnotism as any physician of modern times, yet, as the result of his extensive researches, he arrived at the conclusion that not more than one person in a hundred would be likely to be benefited by the application of hypnotism in case of disease."—*Medical Mirror.*

FORMULÆ.

By H. E. Sanderson, Ph.B., M.D., Assistant Physician State Asylum for Insane, Stockton, Cal.

HABITUAL CONGESTION OF FACE, FROM ACNE, ETC.—Brocq recommends:

Dry extract of hamamelis	gm 0.01
Bicarb. of sodium	gm 0.25
Calcined magnesia	gm 0.20
Powdered ergot	gm 0.05
Socotrine aloes	gm 0.05
Powd. nux vomica	gm 0.02

Two such powders daily for twenty days; then, after intervals, begin again.—*Medical Record.*

ACUTE GASTRIC CATARRH.—Brunton advises:

Bismuth subnitrate	gr. x
Potass. bromidi	gr. xv-xx
Acid hydrocyanic dilut	m. v
Spt. chloroformi	m. x
Mucilag. Acaciæ	℥ ii
Aq.	*q. s. ad* ℥ i

S.—To be taken every three or four hours, ten minutes before meals.—*Medical News.*

R. AND S. COMP. MIXTURE FOR DYSPEPSIA.—This well-known mixture, so often used in dispensaries, consists of the following:

Pulv. rhei	℥ 1 gr. xxxvi
Sodii bicarb	℥ ss
Pulv. ipecac	gr. vi-viii
Tinct. nucis vomicæ	℥ ii
Aquæ menth. pip q. s. ad	℥ vi

S.—Dessertspoonful before each meal.—*Medical News.*

PINWORMS.—Comby believes that the best treatment for these worms is:

Hydrarg Chlorid. Mitis	gm. 0.10
Santonin	gm. 0.05

To be taken each morning before breakfast, in a little milk; also anointing the anus each night with:

Amyl-Glycerole	20
Ungt. Cinerei	10

—*Médicine Moderne.*

VERTIGO IN ARTERIOSCLEROSIS:

Sodii iodidi	℥ ii
Aquæ distilat	℥ viii

S.—One or two teaspoonfuls, three times a day.—*Rev. de Therapeut Medical News.*

Itching of Urticaria:

Menthol	1 part
Chloroform, Ether, Spirit of camphor	each 3 parts

S.—Spray affected parts, and then dust with zinc oxide.—*Province Medicale—New York Medical Journal.*

Acute Eczema.—Stelwagon advises:

Calmine	
Zinc oxidi	āā ℥ ii-iii
Glycerine	
Alcoholis	āā ℥ i
Liq. Calcis	℥ ss
Aquæ	*qs. a d* ℥ ii

—*North Carolina Medical Journal.*

Asthmatic Paroxysm.—Dr. S. Solis-Cohen finds nothing better than the following combination:

Morphin sulphat	gr. $\frac{1}{8}$ to $\frac{1}{4}$
Strychnine	gr. $\frac{1}{60}$ to $\frac{1}{30}$
Hyoscin. hydrobromat	gr. $\frac{1}{200}$

Philadelphia Polyclinic.

Book Reviews.

ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE. By Charles E. de M. Sajous, M.D., and one hundred associate editors, assisted by corresponding editors collaborateurs and correspondents.

The first volume of this monumental work is at hand. We have read a number of the articles—those in which we were interested at the time, through the daily routine of practice—and have found them in every respect helpful and satisfying.

The arrangement of the material seems excellent. When completed, the work "will present all the general diseases treated of in the text-books on practical subjects—medicine, surgery, therapeutics, obstetrics, etc."

The general text, or description of a disease, is in large type, while the excerpts from journals are in small type, thus avoiding confusion. The subjects have been arranged in alphabetical order, with a system of cross indexes, which greatly facilitate reference.

This work, to our mind, promises the greatest help to the practitioner of anything yet published. It gives the latest ideas regarding disease, its symptoms, pathology, etiology, diagnosis, prognosis and treatment, with clinical excerpts for the past ten years, and the literature of '96 and '97, all placed in such a way as to *be easily read*, and *assimilated* without laboring through hundreds of pages of literature; *and when the reader has finished an article, he knows that he has the whole subject, as known at the present day, and presented by men especially capable in their several departments, completely mastered* and this with the smallest possible amount of work on his part.

It is to be completed in 6 vols, of about 3,600 pages each. There will be altogether about 16,000 clinical excerpts, properly classified, in addition to the didactic matter proper. The volumes, which will appear about once in five months, are to cost $30 in all, including a service of 3 years of the monthly cyclopædia, ranging along with the work proper, that is, alphabetically.

We heartily commend the work to our readers, believing as we do that it is the most useful work which has yet appeared for the ordinary practitioner. J.L.S.

A TEXT BOOK UPON THE PATHOGENIC BACTERIA, FOR STUDENTS OF MEDICINE AND PHYSICIANS. By Joseph McFarland, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia, etc, etc.,

The appearance of the second edition of this work within two years shows that it has taken its place among the standard words on Bacteriology. It has been thoroughly revised enlarged and brought up to date. The recent advances in our knowledge of the typhoid bacillus, diphtheria bacillus, gonococcus, etc, are given due consideration, and chapters have been added dealing with the bacteriology of whooping cough, mumps yellow fever, hog cholera, swine-plague and describing the bacillus aërogenes capsulatus and proteus vulgaris.

We have found the work most satisfactory for students, and in its improved form can heartily recommend it as a concise, attractive, and reliable guide to the study of the pathogenic bacteria. H. B. A.

ELECTRICITY IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE NOSE, THROAT AND EAR. By W Sheppegrell, A.M., M.D.

No systematic attempt has hitherto been made to present a work which is limited to the consideration of the application of electricity to diseases of the nose, throat and ear, and Dr. Sheppegrell has therefore opened up a new field of investigation, and has done it thoroughly and efficiently in this volume of over 400 pages.

His object in putting forth this work is to systematise the many modes and methods of the treatment of these organs by electricity, as a basis for future investigation.

The earlier part of the book is taken up with a full and moderately lucid description of the general principles modes of production and methods of applying electricity. This is followed by a discussion of the examination of the organs, transillumination, the electric cautery, cataphoresis, massage of the ear, etc.

This work is one which will be hailed with pleasure by every medical man who has attempted to use electricity in the treatment of the special organs, and we can confidently recommend it to the readers of the LANCET. D. J. G. W.

Atlas and Abstract of Diseases of The Larynx. By Dr. L. Gruenwald. Translated by R. Max Goepp, and edited by Charles P. Grayson, M.D.

This is the third Atlas of the Lehmann Medicinische Handatlanten to be issued by W. B. Saunders, of Philadelphia.

The original work is too well known to need further commendation. The present volume gives a brief account of the etiology, symptoms, treatment and prognosis of the various affections of the larynx, but its chief merit is the excellent series of over 100 colored macroscopic and microscopic plates, each accompanied by a short description, which follows.

To those who have previously invested in colored plates, it will be welcome news that this really excellent work can be purchased for the small sum of $2.50. It will give a great impetus to the study of laryngoscopy by the general practitioner.

D. J. G. W.

BACON AND BLAKE ON THE EAR.

A Manual of Otology. By Gorham Bacon, A. M., M.D., Professor of Otology in Cornell University Medical College, New York. With an Introductory Chapter by Clarence J. Blake, M.D., Professor of Otologyin the Harvard Medical School, Boston. In one handsome 12mo. volume of 400 pages, with 109 engravings and 1 colored plate. Cloth, $2.00 *net*. Lea Brothers & Co , Publishers, Philadelphia and New York

This new and compendious Manual of Modern Otology owes its text to Professor Gorham Bacon of the Cornell University Medical College in New York City, and it bears a cordial endorsement in an introduction by Professor Clarence J. Blake, of the Harvard Medical School, Boston. It comes to hand with the full stamp of authoritativeness and at a most opportune time.

Though one of the more patient of human organs, the ear has its own share of troubles, and their urgency, painfulness and contiguity to vital spots renders it incumbent upon every student and practitioner to be prepared to meet them. Modern Otology is abundantly resourceful, as shown in this clearly written and well illustrated handbook, which will be of service not only to the undergraduate and the general practitioner, but to the otologist as well.

THOMSON ON CHILDREN.

A Guide to the Clinical Examination and Treatment of Sick Children. By John Thomson, M.D., Extra Physician to the Royal Hospital for Sick Children, London, Lecturer on Diseases of Children, Edinburgh School of Medicine. In one crown octavo volume of 350 pages, with 52 illustrations. Cloth, $1.75, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The literature of pediatrics is enriched with this compact volume, practically on diagnosis and treatment. The author has properly approached his subject through the field of clinical medicine, in recognition of its rational relationship with other human affections, and the advantages of so regarding it. He points out the initial difficu ties, and encouragingly assures his readers that when once they are surmounted, practice among children is at least as easy as among adults. He has endeavored to convey a command of the neeessary clinical methods, to inculcate the tact and sympathy which are particularly necessary to success, and to show where the line runs between normality and abnormality, a matter of especial and obvious practical importance.

GREEN'S PATHOLOGY AND MORBID ANATOMY.

Pathology and Morbid Anatomy. By T. Henry Green, M.D. Lecturer on Pathology and Morbid Anatomy at Charing-Cross Hospital Medical School, London. New (8th) American from the eighth and revised English edition. In one very handsome royal octavo volume of 600 pages, with 215 engravings, many being new and a colored plate. Cloth, $2 50 *net*. Lea Brothers & Co., Publishers, Philadelphia and New York.

When a work has run to its eighth edition in England and its eighth in America it presents credentials of merit which cannot be questioned. *Green's* has undoubtedly been the leading text-book in its department, and as its useful combination of subjects has not been paralleled, despite its success, it is fair to infer that its exceeding merits are its best protection from competitors. This is no doubt aided by the very low price which its large sale has rendered possible. The new edition preserves the characteristics which have won popularity, but shows a revision and rearrangement on every page in conformity with the advances of the subject. The series of illustrations has always been notable for clearness and beauty and in this edition many new ones will be found.

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PUBLISHERS' DEPARTMENT.

TREATMENT OF ACUTE URETHRITIS.

Since the discovery of the specific organism of gonorrhœa, the gonococcus of Neisser, the antiseptic treatment of this disease has been established upon a firm scientific foundation. Among the urethral antiseptics the nitrate of silver would rank very high if it were not for its many disadvantages, especially its irritating effects even in weak solutions, and its property of being readily decomposed and precipitated by the secretions, thus impairing its activity as a germicide. For this reason a number of silver compounds have been introduced in late years, none of which has, however, been completely free from these disadvantages. Lately, Dr. Eichengrun has prepared a silver compound, named Protargol, in which the objectionable features of the other silver preparations have been entirely eliminated. Protargol is a firm combination of silver with a proteid base, and is unaffected by alkalies, sodium chloride, albumen, or other substances which decompose and precipitate other silver compounds. For this reason it is not decomposed by the urethral secretions, and, therefore, exerts a more penetrating action than other urethral antiseptics. While an efficient germicide, it is free, however, from any irritating effect upon the mucous membrane, and is indicated even in the most acute stages of gonorrhœa. The experiments made by Professor Neisser and Drs. Goldenberg, Barlow and Benario have shown that it is an ideal remedy in the treatment of cases of acute and chronic gonorrhœa of the anterior and posterior urethra, causing a rapid disappearance of the gonococci and a prompt cure. Protargol is employed in 0.25 to 2 per cent. solutions in water, in which it is readily soluble, either by the method of injection or irrigation. In preparing these solutions it is advisable to stir the powder into a paste before adding the rest of the solvent.

IMPERIAL GRANUM is a prepared food that makes friends wherever its merits become known. The writer has been familiar with it for years, and takes pleasure in relating the following clinical test of its merits: "The patient, reduced by disease and from the effect of the anodynes necessarily given to alleviate her sufferings, developed malignant cholera morbus, and for days lay in an almost unconscious condition. As a last resort, she was taken to a Boston hospital, where the physicians began administering Imperial Granum, prepared as directed for acute cases, in very small quantities. After several trials it was retained, and the strength and quantity was slowly increased. After four weeks' treatment, taking Imperial Granum only for nourishment, she was discharged from the hospital, and a few weeks later endured a severe surgical operation from which she completely recovered, and to-day seems in perfect health.

Dr. Lapthorn Smith's Post-Graduate Classes.—Dr. Lapthorn Smith, who has been studying in Europe during the summer, has returned to Montreal. Following the example of the European gynæcologists, he is forming a post-graduate class limited to six practitioners, each course of demonstrations lasting a month.

District of Columbia Health Report on the Value of Antitoxin.—"It is gratifying to note the general decrease in the mortality of diphtheria. It is now 17.7 per cent. lower than it has been at any time since data became available for calculation. The treatment of diphtheria by Antitoxic Serum cannot be too highly commended.

"Early last fall this department abandoned the plan of producing its own antitoxin, and has since purchased it in the open market, which arrangement has been very satisfactory."

These statements appear in the recent annual report of the Health Officer of the District of Columbia. Mulford's Concentrated Antitoxin was employed to the exclusion of all other serums, and it is specially noteworthy that the large percentage of recoveries here recorded confirms the combined evidence of the collective investigations of the American Pediatric Society and the Ohio State Board of Health, to the effect that this product invariably yields the highest and best results.

Frederick Stearns & Co., Windsor, referring to their new catalogue, say: "We have just completed a thorough revision of our pharmaceutical catalogue and are ready to begin its distribution. It is quite unique in many ways, and is not merely a price-list but is a convenient hand-book of reference which we believe will be of much value to both physicians and pharmacists. It is impossible, in a limited space, to give more than a general mention of its valuable features, but of these we wish to call attention to the following: It will serve as a dose book for nearly all the products (several thousand in number) mentioned therein; as a work of authoritative reference of more than a thousand botanical names and common synonyms; as a condensed materia medica, the properties of the preparations being succinctly stated. In addition to these features of the catalogue proper, a large amount of useful information concerning various drugs and preparations is given in the thirty pages of notes of reference. Following this we find a scheme for urine analysis, written especially for this work by Dr. Chas. C. Yarborough, late Professor of Medical Chemistry in the Tennessee Medical College; various tables of information such as the following: Number of drops in a fluidrachm, percentage solutions, how to dilute alcohol, metric and ordinary equivalents, etc.

"We do not believe that any other pharmaceutical catalogue will be found so replete with valuable information, and it is hardly necessary to add that we have spared no pains or expense to make this a useful and reliable book of reference. We will be pleased to send a copy of it to any physician desiring the same. Ask for the new 'B' List."

The Canada Lancet.

VOL. XXX.] TORONTO, NOVEMBER, 1898. [No. 15.

ORIGINAL ARTICLES AND COMMUNICATIONS.

NOTES ON FEMALE RISKS.

A paper read by James Thorburn, M.D,, Medical Director North American L Toronto, Can., at the 9th Annual Meeting of the Association of Life Insurance Medical Directors. Montreal, July 6th and 7th, 1898.

In view of the ever-increasing number of females who are seeking employment and who are wage earners, the question of the value of female life for purposes of life insurance is one which, of recent years, has been prominently brought to the notice of medical directors of life insurance companies. Fifteen or twenty years ago the number of female risks undertaken was very few compared with those at present assumed, and where insurance was sought by the gentler sex an empirical extra premium was charged, or the risk was immediately declined. In fact, it is the custom of some companies even now to reject applications for life insurance on females. Men are no longer the sole wage earners; women now engage in many of the pursuits and callings that men are employed in. They are frequently compelled to sustain themselves or contribute to the support of a household; they may also have to make future provision for themselves or for others. When we look around at the different avenues which have been opened up for female service, when we see women teachers, stenographers, typewriters, nurses, saleswomen, clerks, bookkeepers, merchants, milliners, dressmakers, artists, designers, authors, agents, artisans, printers, physicians, preachers, etc., etc., it must be very evident that they are entitled to the benefits of life insurance to a very appreciable extent.

It has been stated, and I think with considerable force, that every life which earns money has a financial value, the failure of which life represents so much capital lost and the replacement of which can be most effectually secured by life insurance. If this be admitted, there can be no question but that females are entitled to the benefits which the beneficient system of life insurance grants. That there are difficulties surrounding the insuring of females must be evident to everyone who has given the matter careful consideration and who has had practical experience. The conditions of female life are entirely different to those of male life, and upon first consideration the inexperienced might claim that life insurance was never intended for women, except in so far as they should benefit directly by the death of the assured. That this is entirely fallaci-

ous needs no argument on my part, but I think that it may be at once accepted that there is at the present day, among a certain class of females, as important need for life insurance as exists among the sterner sex.

In these notes I propose to refer (1) to the experience of life insurance companies in respect to female mortality and their experiences; (2) to the conditions attendant upon the insuring of female risks; (3) to the companies' practice in granting policies to such persons, and to conclude by a few practical observations.

(1.) EXPERIENCE OF LIFE INSURANCE COMPANIES.

(a) JOHN HANCOCK, MUTUAL LIFE, 1863 to 1883.—It is pointed out that the number of female risks was too small to render the company's experience of value for statistical purposes. The results, however, showed that the company's experience regarding female risks was not satisfactory, and that the usual extra premium of ½ per cent. charged on such risks was none too high.

(b) CONNECTICUT MUTUAL LIFE, mortuary experience, 1846 to 1878.—For age groups 7 to 45 the death rate was largely in excess of the death rate of that of male lives and of the table rate; while for age groups 46 to 80 the death rate is below that for male lives as well as below that of the table rate.

(c) PROVIDENT LIFE AND TRUST, mortuary experience, 1866 to 1885.—The experience shows that the death rate among females is higher than among males; the figures go to show that above age 50 the female lives are better than male lives, but at younger ages are worse, are particularly so under the age of 20.

(d) NEW ENGLAND MUTUAL LIFE, mortuary experience, 1863 to 1892.—This company's experience when compared with similar female experiences was favorable, but when compared with the company's male experience indicates that female life was not so favorable as male life and that there was a marked selection against the company under policies of more than average amount.

(e) AUSTRALIAN MUTUAL PROVIDENT SOCIETY, mortuary experience, 1849 to 1888.—It is the practice of this society to add a loading of three years to the ages of all females within the child-bearing period. Where the assumed (or increased) ages are dealt with, the actual deaths among females are considerably less than the number expected, according to the society's general experience; even when only healthy lives are dealt with, the actual mortality among female lives is not materially in excess of that among male lives.

(f) Institute of Actuaries Experience, 20 British offices and 30 American offices' experience.—Both of these extensive experiences indicate that female mortality between 20 and 45 is greater than male mortality between these ages, but that female life after age 45 is more favorable than male life after that period.

(g) Ten Scottish Assurance companies' experience, 1815 to 1863.—This experience demonstrates that the difference between mortality of males and females is much greater in insured life records than among the gen-

eral population. Out of an equal number of males and females alive at age 10, it is shown that a larger number of females die up to age 45. Thereafter the males suffer the greater mortality.—(J. I. A. XIX., 200.)

(h) METROPOLITAN LIFE INSURANCE SOCIETY, England, mortuary experience 1835 to 1890.—Female lives were shown to be, on the whole, superior to male lives; an experience at variance with that of most offices.

(i) SCOTTISH EQUITABLE LIFE (J. I. A. XXI., 226).—The number of females that entered into the experience was 2,205 and the total years of life 30,521; the number of deaths was 668, and the average time for which the lives were under observation was nearly 14 years. While the number was somewhat small, the experience was described as an unusually mature one. The deaths which were compared with those that might have been expected, according to the usual British Standard of Healthy Male Lives, namely, Institute of Actuaries Healthy Males table, to ascertain whether the mortality among females differed so materially from that among males as to justify the extra premiums of $2.50 per $1,000 up to age 50, so usually charged by British companies. The results showed that from 27 to 45 female mortality exceeded the expected, according to the standard adopted, and that under 27 the experience was favorable. It was calculated that the excess of mortality between 27 and 45 would be met by an annual charge of 2 shillings and 10 pence per 100 pounds. From ages 46 to 55 the female mortality was almost exactly the same as the standard adopted; while from ages 56 to 58 the female mortality was considerably less than that of the standard.

(j) German female mortality.—The GERMANIA, a prominent German life insurance company, notable in its own country for writing female risks, made an investigation of its experience. No marked increase of mortality was revealed as arising from undue proportion to sexual maladies, the fatalities having a general etiology. The insured were mainly married, of the middle or higher class; 65,145 lives were included in the observation. The average insurance duration was 7.15 years. Below is given, for every second age up to 40, and for every second age from 52 to 60, the death rate of this company, together with the death rate for female lives in the German Empire.

Age.	Germania Company, female lives.	Female lives, German Empire.	Age.	Germania Company, female lives.	Female lives, German Empire.
20	.94	.61	36	1.32	1.14
22	1.05	.70	38	1.27	1.19
24	1.16	.78	40	1.15	1.22
26	1.17	.85	52	1.67	1.80
28	1.09	.91	54	1.82	2.03
30	1.25	.97	56	1.98	2.33
32	1.17	1.02	58	2.31	2.75
34	1.12	1.08	60	2.84	3.29

(k) French assured lives (J. I. A. XXXIII., 485).—A short time ago four chief life insurance companies in France combined in compiling their mortuary experience. The experience was taken out in respect to assured lives and annuitants. The result, so far as assured lives were concerned, showed (1) that the mortality, especially at the younger ages, is appreciably higher than that of English female assured lives, and (2) that

for whole life insurance the premiums were actually less when compared with premiums for French male assured lives. This, however, does not infer that for all ages the expectation of life of the female exceeds the male. The fact is (1) that French female lives have a less expectation of life than French male assured lives, up to age 30, beyond that age the female life has an increased expectation of life. The following table gives the exact figures for quinquennial ages 20 to 85, inclusive:

Expectation of life of French assured lives:

Age.	Male.	Female.	Age.	Male.	Female.
20	42.06	40.82	55	16.96	18.19
25	38.41	37.41	60	13.83	14.85
30	34.68	34.50	65	11.01	11.77
35	31.02	31.45	70	8.50	9.08
40	27 40	28.25	75	6.38	6.93
45	23.79	24 99	80	4.72	5.45
50	20.31	21.62			

Mr. MASSE (J. I. A., XXIX., 71), a French writer, points out, (1) that among the great body of British assured lives, according to the British Institute of Actuaries' experience, a greater mortality exists among females than among males. (2) That the same feature is observed in the German experience, and in the experience of the 30 American offices. (3) That these facts show (a) that up to age 45 the mortality of males is lower than that of females, and, (b) after 45 years of age that the reverse is the case. He states that the main causes of the extreme mortality among females under 45 is due to the risks and diseases peculiar to females: phthisis, anemia, etc., etc. The American statistics (30 American offices) indicate other diseases. The same writer states that German companies add three years to the age of female lives insuring before age 45 and remove the extra after that age.

(1) The following table applies to the expectation of life of the population of Victoria, N. S. W., which is somewhat remarkable in that it indicates for each year of age a considerably increased expectation of life for the female when compared with the male:

Age.	Male.	Female.	Age.	Male.	Female.
15	45.21	47.46	40	26 21	28.70
20	41.05	43.31	45	22.74	25.24
25	37.20	39.46	50	19.43	21.80
30	33.49	35.81	55	16.33	18.39
35	29.80	32.21	60	13.44	15.12

(Am. Ex. & Rev., 1894.)

I think the general opinion to be obtained from these various experiences is that female assured life below age 45 is not so favorable as male life, but that after the latter age it is more favorable, and probably that female vitality considered for all periods of life is greater than male vitality. The late CORNELIUS WALFORD (J. I. A. XIX., 174), a British actuary of note, made a very exhaustive examination some years ago of the experiences deduced from time to time in respect to female mortality, and concluded that female lives were not inherently bad, but on the whole, they were better than male lives. He admitted, however, that assured female lives were inferior to male assured lives, and gave as the reason that not only could this be attributed to insufficient medical exami-

nation, but that selection against the office, partly intentional (and perhaps partly involuntary), certainly often involuntary, so far as the lives themselves are concerned, was the real solution. He stated that the main causes are to be traced to the circumstances which gave rise to the insurance of female lives; for instance, under marriage settlements, where the mother frequently has a life interest in the funds settled and on her death it passes to her children,—if the wife shows any signs of delicate health insurance is secured, otherwise, no insurance is contemplated.

It has sometimes been stated that the risks of child birth furnish the solution of the extra mortality of assured female lives, and in this connection it might be interesting to note what is the effect of marriage on female life, both during the period of childbirth and after that period has passed.

The annual report of the Registrar General of Scotland (J. I. A. XXII., 233), enables us to determine this. Arranging the female lives into two groups, (1) females at the ages when they are capable of bearing children, and (2) females past the child-bearing age, viz., 45 to the close of life. It is observed that the high mortality of females is limited to the child-bearing age, 15 to 45, whereas above that age the married female dies at a considerably lower rate than the unmarried female. Comparing the mortality of married and unmarried females at every quinquennial period of life, the high death rate of married females appears to be confined to the ages under 30; from 30 to 35 and 35 to 40 the death ratio of the married females falls below that of the unmarried. It has also been proven that the excess of mortality in the married female as compared with the unmarried at the same age, is almost solely due to the superadded dangers attending the birth of the first child. The married female even during the rest of her child-bearing life, has an equal chance of life with the unmarried, and has a better chance of life than the unmarried after she has passed her 30th year. It is found that the married female dies at a higher ratio during the three quinquennial periods of life, 15 to 30 years, but during the latter portion of her child-bearing life, when the half of her children are born, viz., 30 to 40 years of age, the married die at a lower rate than the unmarried. At the age when the usual "change of life" occurs, viz., 40 and 45 years, the mortality of the married female again slightly exceeds that of the unmarried; a result which might have been expected, seeing that the fatigues of child birth and the hard labor connected with the nursing and rearing of a family somewhat weakens the system and renders the crucial period of life somewhat more trying to the married than to the unmarried woman. From that period on to old age, viz., 75 years, the married and widowed die in smaller proportion than the unmarried. The higher death rate suffered by the married females from 15 to 30 years of age is, in all probability, caused by the greater dangers of life which in a civilized state attends the bearing of the first child. Every medical man knows that the risk to a mother is far greater at the birth of her first child than at any subsequent delivery, and that the danger is greater just in proportion to her delicate uprearing. The following table will render these views almost a certainty. It shows the number of mothers at each quinquennial period of life who

gave birth to children in Scotland in 1855 and the number and proportion of those at each age who gave birth to their first child.

Ages of mothers.	Total number of mothers.	No. bearing first child.	Perc't. bearing first child.
15-20	2,589	1,424	55.00
20-25	19,230	7,650	39.78
25-30	25,679	4,448	17.32
30-35	21,317	1,502	7.04
35-40	15,070	544	3 61
40 and above.	7,153	54	.75
All ages	91,038	15,622	

From this it appears that it was only at the ages when a very high proportion of the married women were giving birth to their first child that their death rate rose higher than that of the unmarried, but the moment that age was attained when the great majority of the married women had got over the birth of the first child, viz., about 30 years of age, the mortality of the married women fell below that of the unmarried.

Mr. MESSENT (J. I. A. XIX., 206), a British actuary, stated that if the registers of lying-in institutions of Great Britain were examined, and also the works of medical men who had devoted attention to the subject, it would be found that the risk of child-bearing is much overrated, while in insured lives the fact is that the mortality among females is not so high as among males, but that the defect in the female life exists partly in the causes which produce the insurance and partly in the way in which the medical examinations are made. He suggested that no examination be made of a female unless the person examined be accompanied by another female. The medical men are unable to ask a female, when alone, questions which they would be able to ask a male candidate. Mr. SMEE (J. I. A., XIX, 203), also a British actuary, after making an examination embracing 16,000 cases of midwifery, stated that the mortality of females is higher in the first birth and gradually diminishes until the fourth birth. It is believed that death frequently occurs from consumption, which no amount of medical examination could reveal; in some cases there is no trace of consumption before the birth of a child, and yet within two months thereafter the woman dies from the disease. The cause of mortality among women who have no children, to a larger extent than among those who have children, is "cancer uteri," which not infrequently happens about the age of 42. Mr. HART, of the SCOTTISH EQUITABLE SOCIETY, after making an examination of the mortality of married females of the peerage, intimated that he believed that insurance on the female life should be considered with regard to the time she had been married, and that it would be advisable in the case of an unmarried woman to stipulate for an extra premium on marriage. This, however, would hardly be practicable. The heaviest mortality was found to exist in the second year after marriage, but some statistics showed that this ocurred in the first year after marriage.

Some time ago I wrote to the life insurance companies of the United States and Canada asking them what was their practice in respect to the insuring of female risks, and I beg now to thank the medical directors of

these companies, personally, for their kindness in promptly replying, and for giving me the information desired. It will be interesting and profitable to record briefly the methods which life insurance companies employ in dealing with this class, but before doing so I think it important to preface these rules by a extract from a communication of Mr. BENJAMIN F. STEVENS, President of the NEW ENGLAND MUTUAL LIFE, published in "Mortality Experience on Female Risks" compiled by that company.

"Experience shows that insurance upon lives, whether male or female, in which no pecuniary interest appears to exist on the part of those who are to be benefited, is in general a loss to the company, being speculative in character, and therefore more hazardous than ordinary risks in which an interest really exists. Thus, a widow left with a family depending upon her exertions for support is a case clearly insurable, and, it is believed, never objected to. Or a woman persecuted with an idle or dissolute husband may in certain places contract debts and enter into trade upon her own account for the support of her family. But the relationship alone does not create a pecuniary or insurable interest. In general terms, therefore, no policy will be issued by this company upon the life of any person, male or female, unless there is manifestly an insurable interest on the part of the beneficiaries. As at present advised, the insurable interest must, in the case of a woman, be founded upon an income depending upon her life, which may come in either of two ways: (1) by property left in trust for her benefit, the income of which expires or reverts to parties outside of her immediate family at her decease, in which her husband and children are pecuniarily interested; (2) by her own exertions in the support of her family, induced thereto by circumstances before mentioned. Where such insurable interest clearly exists no one can be benefited by the death of the assured beyond the amount of that interest, and therefore there is no inducement to fraud. If the insurable interest is ignored and policies made haphazard the beneficiary has an interest in the death of the assured, and not in the life, thus offering a direct incentive to crime. The company takes the ground that insurance in any form is indemnity for loss, and there can be no loss where no interest exists. Fraud is more easily perpetrated in the case of women than in men, because of the peculiarity of many complaints with which they are affected, and when concealment of the fact is so possible it is in itself an inducement for unscrupulous persons to obtain insurance."

I also think it important to quote the following in respect to insurable interest, contained in a circular letter of JOSEPH A. DEBOER, secretary of the NATIONAL LIFE INSURANCE COMPANY, which will elucidate the question of insurable interest, which plays such an important part in the treatment of female risks.

"An insurable interest may exist in applicants of both sexes, whether single or married, and of whatever age. In the young and in women as a class, it is not so great as in men, and, for that reason, requires a statement of facts to make it clear. Financial irresponsibility and dependence have been safely regarded as implying moral hazard in the insurance of life. Because these things more truly describe all women than all men, the fact of an insurable value or interest must be looked at carefully, when women apply.

"All which it seems necessary to show in order to take the case out of the objection of being a wager policy is, that the assured has some interest in the life of the '*cestui que vie*' ('beneficiary'); that his temporal affairs, his just hopes and well-grounded expectations of support, of patronage and advantage in life, will be impaired; so that the real purpose is not a wager, but to secure such advantages supposed to depend on the life of another."—*Shaw, C. J.*

"It is not very easy to define with precision what will in all cases constitute an insurable interest, so as to take the contract out of the class of wager policies. It may be stated generally, however, to be such an interest, arising from the relations of the party obtaining the insurance, either as creditor of or surety for the assured, or from ties of blood, or marriage to him, as will justify a reasonable expectation of advantage or benefit from the continuance of his life."—*Field, C. J.*

Following these definitions, it is reasonable to conclude that blood relationship, or that of marriage, presupposes an insurable interest in law; but for life insurance purposes the test of this interest is a money valuation. If the latter is wanting, insurance would be speculative.

ÆTNA LIFE INSURANCE Co., Hartford, Conn. Up to the age of 55, $5 per $1,000 is charged. No extra charge if insurance is on endowment plan for 20 years or a less number of years. If the husband is insurable it is essential that his life also be insured. Especial care exercised in the admission of females.

BERKSHIRE LIFE, Pittsfield. Before receiving applications on the life of females, advance information required, embracing among other things the following: Name, residence, occupation, particulars of date and place of birth, race, height, weight, insurance at present carried by applicant, married, single or widow, husband's name and occupation, number of children applicant has had, their names, ages and number now living; amount and character of insurance desired, if declined by any company, the date and name of the company, proposed beneficiary, name of person who is to pay the premium, what property applicant has in her own right, and estimated value.

BROOKLYN LIFE INSURANCE Co., New York City. An extra premium was formerly charged; now females taken at same rate as males. but for limited amounts; essential that proper insurable interest exists: as a rule, policy will not be granted where the beneficiary is the husband.

CONNECTICUT GENERAL LIFE INSURANCE Co., Hartford, Conn. Abandoned the practice some years since of charging an extra premium; accept females at same premium rates as males; insurable interest essential.

EQUITABLE LIFE INSURANCE SOCIETY, New York City. Charge same rates for females as for males; insurable interest essential. Females placed in a class by themselves in order to demonstrate by actual experience whether the old charge of $5 per $1,000 is justifiable or not.

GERMANIA LIFE INSURANCE Co., New York City. Females accepted at the same rate as males. Essential that husband shall also carry insurance. There must be a record as to parturition. Policies will not be granted in favor of husbands. Especial attention is paid to normality of sexual functions.

HOME LIFE INSURANCE CO. Single women, or married women, having given normal birth to a child, charged an extra premium of $5 per $1,000, except on the 10, 15 or 20 year endowment plans. After climacteric period is passed, the extra premium is waived. Insurable interest essential. Husbands cannot be made beneficiaries. Applications will not be accepted from an applicant while she is pregnant until three months have elapsed after the normal birth of the child.

LIFE INSURANCE COMPANY OF VIRGINIA, Richmond, Va. Amount of insurance limited. If married, and husband alive and insurable, he must be insured in some company for an equal amount of insurance to that applied for. Beneficiary assumed to have insurable interest. No extra charge where 20 year endowment plan is selected, or plan involving a higher premium than called for by that policy. On other plans an extra premium of $5 per $1,000 is charged, ceasing after the age of 48. Pregnant women are not insured until 60 days after confinement.

JOHN HANCOCK, MUTUAL LIFE INSURANCE CO., Boston, Mass. Accept female risks without any restrictions.

STATE MUTUAL LIFE ASSURANCE CO., Worcester, Mass. Females accepted on same terms as males for limited amounts. Young married women or young unmarried women who have never borne children, not considered desirable.

MUTUAL LIFE INSURANCE COMPANY, OF NEW YORK. Female risks accepted on the same terms as male risks.

MUTUAL BENEFIT LIFE INSURANCE CO., Newark, N. J. Declines to insure female applicants.

MICHIGAN MUTUAL LIFE INSURANCE CO., Detroit. Declines to insure female risks.

METROPOLITAN LIFE INSURANCE CO. Females accepted on the same terms as males, on 10 payment life plan, and 10, 15 or 20 year endowment plan. An extra premium of $5 per $1,000 is charged on the ordinary life and 20 payment life plan, until the age of 49 has been attained. Essential that the purpose of insurance be clearly shown, and that the moral hazard is without question. The amount of insurance granted on individual lives depends upon circumstances.

MASSACHUSETTS MUTUAL LIFE INSURANCE CO., Springfield. Females insured on the same plans and at the rates for males; great care exercised to see that the beneficiary has an insurable interest on the life insured. Seldom grant policies on the life of married women more or less dependent on their husbands for support.

MANHATTAN LIFE INSURANCE CO., New York. Decline to insure females where there is no definite insurable interest involved; where husband is beneficiary, application not accepted, except where he is dependent on the continuance of the wife's life for support, or would be deprived of her property at her death. Those who have passed the climacteric are accepted at the same rates as male applicants, except on certain low premium forms of insurance. An excess of mortality arising from the insuring of females is made a charge against dividends under the policy. Married women who have not passed the climacteric and have had a child or children will be granted 20 year endowment assurance without extra,

or on other plans involving a lower rate with an extra charge of $5 per $1,000. Married women who have had no children and unmarried women are accepted on the 20 year endowment plan with an extra premium of $5 per $1,000, or on plans involving a lower rate with an extra premium of $10 per $1,000. The amount of the insurance is limited, and the applicant must be not less than 18 nor more than 60.

NORTHWESTERN MUTUAL LIFE INSURANCE CO., Milwaukee, Wis. Declines to insure female risks.

NEW YORK LIFE INSURANCE CO. Accept female applications at the same rate as male applications, provided the beneficiary has a clear insurable interest in the life insured.

NEW ENGLAND MUTUAL LIFE INSURANCE CO., Boston, Mass. Accept females on the same plans and at the same rates as males. Essential that the beneficiary shall have insurable interest in the life insured.

NATIONAL LIFE INSURANCE CO., Montpelier. Accept females on the same plans and at the same rates as males, with certain exceptions: (1) women under 20 years of age; women in pregnancy; women in lactation; married women until after the birth of the first child, or until five years after marriage, are not eligible. The following cases would be considered doubtful and invariably require explanation: (1) Women applying for the benefit of their husbands. (2) Women applying for the benefit of strangers. (3) Women who are not self-supporting or in receipt of an income. (4) Women over 45 and who have not passed the period of menopause.

PRUDENTIAL INSURANCE CO., Newark. An extra premium (not stated) charged upon unmarried females, unless they apply for endowment assurance, in which event no extra is charged. This extra is not imposed upon married women, provided their husbands apply at the same time for insurance; on all other cases the extra premium is charged.

PROVIDENT SAVINGS LIFE INSURANCE SOCIETY.—Females accepted at the regular rates of premiums for certain limited payment life policies, endowment policies and, in exceptional cases, whole life policies. Where the life proposed for insurance is over 50 the life will be accepted on the 20 year renewable term plan. The amount of insurance is limited. It is essential that the beneficiary shall have an insurable interest in the life proposed for insurance. The society will not consider applications for insurance from domestics, ordinary laborers, or ignorant or illiterate females or cases in the rural districts. Special questions are proposed, covering among other things the following: Has the woman property in her own right which is her source of income? Will she pay the premium herself? Is the amount proportionate to her means? If married, husband's name, occupation and address must be given. Is the husband insured? If so, for whose benefit? The motive for the insurance and full details of interest of beneficiary in the applicant's life.

PHOENIX MUTUAL LIFE, Hartford, Conn. Accept females at the same rates as males. The company exercises somewhat more thorough discrimination, and declines to insure during pregnancy and lactation.

PENN MUTUAL LIFE INSURANCE CO., Philadelphia, Penn. Married women over 30 who have not given birth to a child will not be accepted until the expiration of five years from the date of marriage.

Between ages of 20 and 30 only two years will require to elapse. Under the age of twenty each case will be considered on its own merits. Two months must elapse after the birth of a child before application will be considered. Applications on the lives of women under 18 will not be accepted.

PROVIDENT LIFE AND TRUST, Philadelphia, Penn. Women accepted at the same rates as men. Great care exercised in selection. Will not accept during pregnancy, or until reasonable time after child birth. Record as to menstrual and maternal functions must be clear.

TRAVELERS' INSURANCE Co., Hartford, Conn. An extra premium of $5 is charged up to age 48 on the ordinary life, limited payment life and endowment plans of longer term than 20 years; no extra is charged on the 10, 15 and 20 year endowment plans.

UNITED STATES LIFE INSURANCE Co. Females are accepted on all plans and at the same rate as males, excepting on the term plan, under which an extra premium of $5 per $1,000 is charged up to age 48. Insurance on the lives of married women will not be granted except in favor of their children, unless the husband or other proposed beneficiary has a direct financial interest in the life of the applicant. Special inquiry made as to the surroundings, associates and moral condition generally.

UNION MUTUAL LIFE INSURANCE Co. Females accepted on the same plans and at the same rates as males for limited amounts, excepting female factory employees, to whom will be granted only 15 year endowment policies.

UNION CENTRAL LIFE INSURANCE Co., Cincinnati, Ohio. Females accepted on all participating plans at the same rate as men. Amount of insurance limited. Rules more strict with females than with males.

WASHINGTON LIFE INSURANCE Co., New York. Require all female applicants to be examined by women physicians where possible. Women physicians have been appointed at all points in the United States in which they can be found. Essential that beneficiary shall have insurable interest. Investigation being made by the company in respect to female risks insured by it. Settled policy not yet decided upon.

CANADA LIFE ASSURANCE Co., Hamilton. Does not accept applications on the lives of females.

CONFEDERATION LIFE ASSOCIATION, Toronto. Accepts females with an extra charge of $5 per $1,000 up to 50 years of age, except on short endowments and 10 payment life plans.

DOMINION LIFE INSURANCE Co. Females accepted on all plans after age 50 has been attained; previous to that age will accept on all plans except ordinary life.

FEDERAL LIFE ASSURANCE Co., Hamilton. Accept females at same rates as males on the 20 payment life plan and on all other plans involving a higher premium rate per $1,000. On plans involving a lower premium rate than 20 payment life plan an extra premium of $5 per $1,000 is charged.

GREAT WEST LIFE ASSURANCE Co., Winnipeg. Women are insured on ordinary rates where the beneficiary has a direct insurable interest in the

life assured and where they have an income of their own. Those who desire insurance as a means of investment are taken on the endowment plan (presumably at ordinary rates). Husbands will not be made beneficiaries.

LONDON LIFE ASSURANCE Co., London Ont. Females are charged an extra premium of $1 to $3 per $1,000, according to the plan of insurance, the lesser extra premium applying to short term endowments and the greater to long term endowments.

MANUFACTURERS' LIFE ASSURANCE Co., Toronto. If unmarried or married, and after the birth of the first child, an extra premium of $5 is charged on the ordinary life plan; no extra is charged on limited payment life and endowment plans. Married and before the birth of one child an extra premium of $10 per $1,000 is charged on ordinary life plan, and $5 per $1,000 on limited payment life and endowment plans. After the age of 48 no extra premium is charged. The amount of insurance is limited where the age is under 48, and no females will be accepted on the term plan.

ONTARIO MUTUAL LIFE ASSURANCE Co., Waterloo. Accepts women from ages 20 to 50 on 10, 15 and 20 payment life plans and on any form of endowmont not exceeding 25 years' duration; after the attainment of age 50 will accept on any plans at ordinary rates.

ROYAL VICTORIA LIFE ASSURANCE Co., Montreal. Females are accepted on all the ordinary plans without an extra premium excepting on the without profit plans and on term insurance. The amount of the insurance is limited and the beneficiary must be a child of the insured. In cases of unmarried women, each case would be rigidly scrutinized before acceptance.

SUN LIFE INSURANCE Co. An extra premium of $5 is charged on female lives under the age of 50; exceptions occasionally made on endowment policies on widows and married women where the insurance is taken out chiefly for the investment of money.

STANDARD LIFE INSURANCE Co., Canadian Office, Montreal. Discourages agents from canvassing for female risks. When applications are received, however, the risks are accepted at the same rates as male risks. No extra is charged in the case of married women if one child has been born. If applicant has been recently married, an extra of $10 per $1,000 is made until the first child is born. If there are no children the same extra is charged up to four or five years after marriage.

THE SCOTTISH LIFE INSURANCE COMPANIES (J. I. A. XIX., 209) associated some time ago and determined after very careful consideration to charge an extra premium of 5 shillings per cent. per annum on the sum assured, that is $2.50 per $1,000 until age 50 was attained; after that age the extra was discontinued. If the applicant be pregnant for the first time, it was thought that circumstances might exist, not discoverable to the company's medical examiner, involving an unusual risk in the confinement, which may have led to proposal for insurance being made; an additional $5 per $1,000 for the first year was suggested.

BRITISH AND IRISH LIFE INSURANCE COMPANIES (J. I. A. XXIX., 75). Some years ago a circular letter was addressed to all the British and Irish

life insurance companies in respect to their practice, and answers were asked to certain questions; the following is a synopsis of the answers; Question (a). The additional premium, if any, charged for unmarried women.

1 company accepts no females.

46 companies charge no extra, but 2 require payment of $10 per $1,000 on marriage, and 1 an extra premium of $5 on first confinement.

22 companies charge an extra of $2.50 per $1,000.

15 discontinue the charge at age 50, 1 at 45, 6 continue for all time.

2 companies make an addition of 10 per cent. to the premium for all time.

6 companies charge single premiums (5 of $10 per $1,000, 1 of $5 to $10 per $1,000).

1 company uses special table.

Question (b). Married women who have borne no children.

1 company does not accept females.

41 companies charge no extra, (1 an extra of $2.50 if under 30; 1 an extra of $5 at first pregnancy, 1 an extra of $10 if in first marriage year.)

21 companies charge $2.50 per $1,000 extra, 15 discontinue charge at age 50, 6 continue to charge.

2 companies charge 10 per cent. extra, 1 company uses special table.

Question (c). Married women who have borne children.

1 company does not accept females.

52 companies charge no extra. (1 charges $2.50 per $1,000 if under 30).

21 companies charge an extra of $2.50 per $1,000, 15 discontinue charge at 50, and 6 continue to charge extra premium).

2 companies charge 10 per cent. additional to premium, 1 company charges single extra premium of 10 per cent., 1 uses special table.

Question (d). Married women who are pregnant first time.

In many cases application is postponed and in others extra single premiums ranging from $5 to $30 per $1,000 are charged.

After very carefully considering the subject of insuring females, I think that all experience obtained and information gathered would indicate (1) that up to age 48 the female risk is not as good as the male risk; (2) that after the age of 48 the female risk is better than the male risk; (3) that the greatest danger in married females is in connection with the birth of the first child; (4) that the moral hazard is probably the most important factor in the question; (5) that females are more apt to conceal important facts than male applicants are; (6) that it is impossible to secure as complete an examination of the female as of the male.

I beg to offer the following suggestions for your consideration in respect to the insuring of female risks.

(1.) MARRIED WOMEN.

(a) A woman who is pregnant is uninsurable until three months have elapsed since successful delivery; also married women until after the irth of their first chid, or until five years after marriage.

(b) The beneficiary must have a good and clear insurable interest in the life proposed for insurance, and the object for which the insurance is sought must be satisfactorily and definitely set forth. If the person applying for insurance has a family, the beneficiary or beneficiaries must be her child or children. Under no circumstances will a policy be issued in favor of a husband, unless it can be unmistakably shown that he is dependent upon his wife for support, or that in the event of her death he will suffer financial loss, either by property or support.

(c) The husband, if alive and insurable, must be insured in some company for at least as large an amount as the proposed policy on the life of his wife.

(2.) UNMARRIED WOMEN.

(a) The beneficiary must have a good and clear insurable interest in the life proposed for insurance, and the object for which the insurance is sought must be satisfactorily and definitely set forth.

(b) Unmarried women, unless money producers, are not deemed desirable risks from a moral standpoint.

(3.) GENERAL.

(a) Policies should not be granted to married or unmarried women on any of the without-profit systems of insurance, except on 10, 15 or 20 year endowment plan, nor on any term plan of insurance

(b) The company's risk on any single female life should be limited—perhaps not more than one-third of the full amount should be undertaken.

(c) In every case of a female applying for insurance, a special form should be completed and sent to the head office with the application and medical examiner's report.

(d) In the event of an agent having doubt as to whether an applicant will be accepted by the company, on account of the moral hazard, he is requested to complete the special form and transmit it to the head office for consideration. If satisfactory, the office will advise him to have the medical examination proceeded with.

(e) The medical examiners should be specially instructed to exercise the greatest precaution and make a thorough examination of the applicant, endeavoring to elicit any peculiar circumstances which may be connected with the moral hazard of which the company should be informed.

SPECIAL FORM.

1. Applicant's name.
2. Residence.
3. Occupation.
4. Place of birth.
5. Date of birth.
6. Unmarried, single or widowed.
7. If married; husband's name.
8. His occupation.

9. Number of children had.
10. Number now living.
11. Their ages and sex.
12. Their occupations.
13. Name of beneficiary.
14. Relationship.
15. Motive for insuring.
16. Whether beneficiary is dependent upon applicant.
17. If so, give full particulars.
18. Name and particulars of person to pay premium.
19. State source of income.
20. Amount of insurance.
21. Style of insurance.

The above questions should be answered and submitted to the office before any further action is taken.

FACULTIES FOR CLINICAL STUDY OFFERED TO QUALIFIED MEDICAL MEN BY THE LONDON SCHOOLS OF MEDICINE.

On and after the 1st of May, 1898, joint cards of admission will be issued to the Clinical Instruction of the following Metropolitan Hospitals and Schools of Medicine :—

Charing Cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College and Westminster.

These cards will be available for qualified Medical men (British, Colonial or Foreign) only; and will be issued at the following rates :—

For three months, seven guineas; for six months, ten guineas; and for any longer period at the further rate of five guineas for each additional six months.

The cards and further particulars may be obtained on application to the Honorary Secretary, West Wing, Examination Hall, Victoria Embankment, London, W.C.

Evidence of qualification must be furnished at the time of making the application. Many of us have been wondering when some special organization would be attempted in the way of Post Graduate work in London, a medical centre enjoying possibilities for the studious such as perhaps exist no where else in the world. This is at least a welcome beginning; and it is not likely that over there the authorities will go the length in the way of "spoon feeding" that is in vogue in some other well known centres. They are likely to leave the enquirer more to himself, after placing at his disposal the enormous mass of clinical material under their control. Unless some arrangement is made, by which, during the summer season, some of the leading physicians and surgeons of the metropolis can be seen and heard, the movement towards consolidation and systematic post graduate teaching will fall much short of its possibilities.—ED.]

MEDICINE.

IN CHARGE OF

N. A. POWELL, M.D.,

Professor of Medical Jurisprudence and Lecturer on Clinical Surgery, Trinity Medical College; Surgeon to the Hospital for Sick Children, and to the Emergency Branch, Toronto General Hospital; Professor of Surgery, Ontario Medical College for Women. 167 College St.; and

WILLIAM BRITTON, M.D., 17 Isabella Street.

STATE AND MUNICIPAL CARE OF CONSUMPTIVES.*

BY S. A. KNOPF, M.D., NEW YORK.

MR. PRESIDENT, MEMBERS OF THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA: Your invitation to address you on the important subject of State and municipal care of consumptives, extended to me as one of the general profession in no wise connected with any State, provincial, or city board, has been a pleasant surprise to me. While I thank you for the high honor you have conferred upon me individually, I feel deeply the significance of your generous act, being fully aware that you wished above all to honor thereby the general medical profession. There has been of late years growing up in some parts of the country a certain antagonism between the appointed sanitary authorities and the profession at large. Your wish to listen to a humble representative of that great body of American physicians who are on the other side of the camp, who occupy no official position, who are, in other words, simply practising their profession, is perhaps the best evidence of your earnest wish to co-operate with the general profession in all that concerns the interest alike of patient, physician, and the public health.

For this I thank you, because it makes my task easier. To my mind there is nothing more difficult than to talk about tuberculosis, its cure or its prevention, without taking as the basis of one's discourse the absolute assurance of the co-operation of the general profession and the sanitary authorities. So in this spirit of harmony let us unter upon the consideration of our subject proper.

In a paper, on the prophylactic treatment of pulmonary tuberculosis, read before the American Climatological Association at the meeting of the last medical congress in Washington, in 1897, I said: "To prevent pulmonary tuberculosis we must begin with treating the child *in utero*."

Mr. President and gentlemen, the State and municipal care of consumptives must also begin with the child *in utero*.

*Address delivered by invitation at the thirteenth annual meeting of the Conference of State and Provincial Boards of Health of North America, at Detroit, Mich., August 11th, 1898.

This is not the place to discuss the prophylaxis in regard to the procreation of a tuberculous progeny, which must according to our present conceptions of law and ethics, remain the delicate task of the family physician. The duty of the sanitarian and the government in regard to the consumptive poor commences with the care of the tuberculous mother after conception. All I may be privileged to say here is that, according to the experience of prominent obstetricians (foremost among whom I wish to mention my two late and much-regretted teachers: Professor Lusk, of New York, and Professor Tarnier, of Paris), intervention after a tuberculous conception for the purpose of cutting short the duration of gestation, and thus saving the mother's life, has proved disastrous in the majority of cases.

During my visits, some years ago, to many of the sanatoria for consumptives of Europe and of our own country, I inquired into the results obtained by the hygienic and dietetic treatment in those places in cases of pregnant tuberculous patients, and I learned, to my surprise, that a goodly number of these women not only did remarkably well during their pregnant state, but bore healthy children and continued to improve generally. Dettweiler, Römpler and Wolff have kept some of these tuberculous mothers under their observation for years, and no relapses were noted. The only conditions, *sine qua non*, in such cases are the artificial feeding of the child, or, better yet, giving the latter the benefit of a healthy wet nurse, and a prolonged and persistent treatment of the tuberculous condition of the mother under the best hygienic surroundings. Thus, it seems to me, the best policy for the government would be to create institutions, which might perhaps justly be called "maternity sanatoria," where the tuberculous mother, coming from our tenement districts, should be taken at least a few months before her delivery, and should remain until some time after complete recovery from her childbed.

The beneficial effect on the woman's and child's constitution through such an arrangement can hardly be overestimated. Leaving aside the physical well being thus largely assured to mother and child at a period when their organisms need the most tender care, the hygienic training which the mother will have received in such an institution will be of lasting utility to herself and child, to the family, and to the community.

These maternity sanatoria need not be situated at a great distance from the city. All that would be essential is that they should be erected on good porous ground, preferably somewhat elevated, and in a locality where the atmosphere is as pure as possible. The buildings should be constructed according to the principles of modern obstetrical science and modern phthisio-therapy. The physician in charge should be experienced in both these branches of medicine.

The knowledge gained by the mother in the maternity sanatorium will, in all probability, suffice for her to bring up the infant as a relatively strong child and protect it from the dangers of tuberculous infection. But the inherited predisposition may still remain, and at the time the child begins to go to school the State should again make provisions. I have learned by private inquiry that a pregnant woman who has the misfortunate to be syphilitic or tuberculous has great difficulty in gaining

admittance to maternities supported by private contributions. I know from official sources that tuberculous children are not only unwelcome in public schools, but are not infrequently refused admittance, on the ground of being afflicted with a contagious disease. If I am not mistaken, it was in Toronto that the right of the municipality to refuse a tuberculous child admission to a public school was tested for the first time before a court, and sustained on the ground of the contagious nature of the disease.

I do not wish to question the wisdom of this judgment, but I should like to know what is to become of the child if its parents are too poor to pay for private instruction? The child cannot return to the public schools, for its disease is a chronic one and may last for years. If the municipality refuses the benefit of an education in the ordinary public schools to such a child, does it not become an imperative duty to provide special schools for tuberculous children?

Schools, however, in the ordinary sense of the word, would do but little good to such a child. In France, Belgium, and some other European countries, there have existed for years sanatoria for the treatment of tuberculous children, maintained by the municipalities. Attached to all these institutions are regularly established schools. To provide a place where tuberculous children and the children of tuberculous parents—the weaklings of the flock, as they are graphically called by my friend, Dr. Irwin H. Hance, of Lakewood—shall be taken care of, becomes the duty of the government. In these school sanatoria the children will have a chance to be cured, if possible, of their disease or their predisposition, and at the same time they will receive the education which the State owes to all the children of the community. The majority of these school sanatoria may be advantageously placed on the seashore, for it seems a well-established fact that the tuberculous manifestations in childhood, which are most frequently observed as joint tuberculosis or tuberculosis of the bones or of the glands, do remarkably well in marine climates.

The selection of such children for sanatorium treatment would be the task of the school physician, and one should be attached to every public school. He, seeing the children daily, in order to prevent the introduction and propagation of acute diseases, will soon discern between the robust and well-nourished and the weak, dyspeptic, and not infrequently underfed pupils. These latter will, *ipso facto*, always be or become candidates for tuberculosis. If they are placed in time under good hygienic care, their chances of becoming strong and healthy citizens will be materially increased. For children suffering from pulmonary tuberculosis an institution could easily be annexed to each of the larger mountain sanatoria for consumptive adults, of which I shall speak presently.

But before doing so let us ask ourselves: Is there really need of the State and municipality taking care of the tuberculous poor adult? This question has been answered by the greatest sanitary authorities of all civilized countries with a most emphatic yes. Dettweiler, Leyden, and Liebe have spoken for Germany; von Schrötter for Austria; Grancher, Letulle, and Petit for France; Weber, Lindsey and Walters for England; Hansen and Saugmann for Denmark and Sweden; and in the United States we have in Bowditch, Hamilton, Biggs and Prudden, Lee, Trudeau,

Flick, Hindsdale, Otis, Shrady and others strong advocates for the establishment of State and municipal sanatoria for the care and treatment of the consumptive poor.

The crowned heads of Europe, such as the Czar of Russia, the Empress of Germany, the Emperor of Austria, the King of Saxony, the King of Sweden, and the young Queen of Holland have placed the sanatoria for the consumptive poor under their high protection, and have opened their private purses for their support. The nobility and the leaders in finance, art, and literature have been eager to imitate the noble example set by their sovereigns, and the latter, too, have given freely toward the erection and maintenance of such institutions. Thus, in the countries just mentioned a number of establishments now flourish which are doing a world of good by curing the curable tuberculous cases and taking care of the hopeless ones, thus diminishing countless centres of infection. Let me advise again, as I have before, the statesman, physician, or philanthropist who doubts the need of such institutions in the United States to visit the consumptive poor in the tenement districts of our large cities, and study the hygienic and social conditions of these sufferers in their surroundings. Let him watch some of the tuberculous families. After lingering a year either the mother or father dies of consumption, and the remaining partner, having become infected by nursing the companion, dies a year later, after having buried half of the children, who have succumbed to tuberculous meningitis.

I am sure these visitors will emerge from the dark, dreary rooms and the crowded, unclean houses which serve as habitations for millions of poor people, thoroughly convinced of the urgent need of measures to relieve these consumptive sufferers. Let these doubters also experience the difficulty of gaining admittance as a tuberculous patient into a general hospital supported by private charity, or let them watch the rapid decline the poor consumptive often makes, even if he has been fortunate enough to be admitted to a general public hospital, and they will become still more convinced of the urgent need of creating special institutions for this class of patients.

It will be clear to them that something must be done in the interest of the sick as well as in the interest of the still healthy portion of the community.

But how can this be done, and done effectually? What class of patients should the State or municipality take care of? Only the curable or only the incurable ones? Only the poor or also those of moderate means?

If any government is in earnest in its endeavor to combat tuberculosis effectually, besides its regularly enforced laws against bovine tuberculosis, its thorough hygienic and prophylactic measures against tuberculosis in man through sanitary regulations and public instruction, it must take upon itself the care and treatment of the curable and incurable cases of tuberculous patients, among the poor and among those of limited means. I mean here by limited means a financial condition which does not permit a tuberculous patient to enter a private sanatorium or to have at home such medical, hygienic, and dietetic care as will assure him the best possible chance of recovery.

The next point to be considered would be how to recruit the patients, and how to discriminate between the proper and improper cases, and thus avoid increasing the dreadful and degrading abuse of medical charity, from which we all, and especially the general practitioners, suffer so much in these days.

Permit me to present to you a few suggestions in connection with these problems. Just as there exists in nearly all States or municipalities a commission or a number of special examiners for the purpose of determining who is a proper subject for State care in an asylum for the insane, so should there exist a commission for the determination of admission to a municipal or State institution for consumptives.

Such a commission, composed of a certain number of general practitioners and health officers, should be aided in its work by the charity organizations. Each and every case should be investigated by a combined committee of physicians and laymen, for the following purposes:

1. To determine the applicant's condition by a medical examination.
2. To visit his home if he has been found tuberculous, and to institute such hygienic measures as seem necessary (distribution of pocket spittoons, disinfectants, etc.).
3. To examine the other members of the family in order to find out if any of them have also contracted the disease, and if so, to counsel proper treatment.
4. To report in full to the sanitary authorities concerning the condition of the patient's dwelling. Its renovation or even destruction may become imperative when it is evident that tuberculosis has become "endemic" there, owing to the condition of the soil or to other sanitary defects.
5. To determine the financial condition, whether the patient is or is not able to pay, and whether or not by his being taken to an institution the family will become destitute.

If the latter should be the case, it would become an imperative duty for the municipality to provide for the family. In many cases a letter of inquiry, sent to the former medical attendant of the patient, would materially aid the work of the investigation committee.

Any individual should have the right to present himself for examination, and every physician should be at liberty to recommend any person for examination to the board of his precinct or district.

The institutions needed to carry out this plan would be:

1. A centrally located reception hospital and dispensary. The dispensary should treat the ambulant tuberculous patients, whose admission into the sanatorium is impracticable or has to be delayed for want of room. These dispensaries should also serve the patient discharged from the sanatorium as a place to seek counsel, and thus aid in his continued improvement, or guard against approaching relapses.

2. One, or several city sanatoria, located in the outskirts, and, if possible, in a somewhat elevated region where the atmosphere is known to be pure. Here all patients should pass through a preparatory sojourn before being sent to the mountain sanatorium. The more advanced cases would all be retained here.

3. One, or several mountain sanatoria, at no greater distance from the city than three or five hours by rail, at an altitude, if possible, of between

one thousand and two thousand feet, on porous ground with southern exposure, and as nearly as possible protected against the coldest winds, preferably surrounded by a pine forest. A farm in the vicinity, where the thoroughly convalescent patients could do light work, might make the institution in a measure self-supporting. To this place the selected incipiant and the improved cases from the city sanatorium should be sent to complete their cure. To the mountain sanatorium there should also be attached a department for children suffering from pulmonary tuberculosis.

4. Several seaside sanatoria for the treatment of children afflicted with tuberculous diseases of the joints and other tuberculous (scrofulous) manifestations.

5. A maternity sanatorium. Of the requirements of such an institution I have already spoken.

By this plan you will see that I am in favor of treating tuberculous patients near their homes, and in the same or nearly the same climate as that in which they will have to live and work after their restoration to health. My reasons for advocating such principles are founded on the experience of all modern phthisio-therapeutists, who have demonstrated that the hygienic and dietetic treatment in closed establishments is feasible and successful in nearly all climates. I know from personal observation that cures of pulmonary tuberculosis effected in our ordinary home climates. I know from personal observation that cures of pulmonary tuberculosis effected in our ordinary home climates, which are in the average not considered as especially favorable to this class of sufferers, have been more lasting and more assured than cures obtained in more genial climes. And I may perhaps say right here that, with all due deference to the opinion of others, I do not believe there exists any climate which has a specific curative quality for any form of pulmonary tuberculosis. Climate can only be considered a more or less valuable adjuvant in phthisio-therapeutics, but not a specific.

It is, furthermore, my firm conviction that for social and economic reasons the majority of tuberculous patients will have to be treated near their homes. Only by adhering to this principle can we expect to cope successfully with tuberculosis—this disease of all climes, but which is most prevalent in large centres of population, where civilization has seemingly attained the highest standard. For this reason a corresponding development of sanitary science and the widest diffusion of the knowledge of hygiene are indispensable wherever men mass themselves together in large urban communities.

That through the presence of properly conducted sanatoria for consumptives not the least danger can arise to the vicinity where such institutions may be placed, I have endeavored to demonstrate in several of my previous writings by citing the official statistics concerning the mortality from tuberculosis for forty and for one hundred years, respectively, before and after the establishment of sanatoria for consumptives in certain villages in Germany. To be brief, I will only summarize these statistics here by saying that in the two villages, Goerbersdorf and Falkenstein, where five of the largest sanatoria are situated, the mortality

from tuberculosis has actually decreased among the village people more rapidly and more largely than anywhere else, it being now one-third less than before the establishment of those institutions. Thus we see that properly conducted sanatoria for consumptives not only serve as hygienic educators to individuals and families, but as instructors in hygiene to whole communities. The example in scrupulous cleanliness set by employees and inmates of such sanatoria thus bears the best fruits. The same cannot be said of open health resorts, where the regulations concerning the expectoration are less severe. In these places the mortality from tuberculosis has increased among the native population since they have been frequented by consumptives. I am able to substantiate this statement by letters addressed to me by Dr. Ballestre, of Nice, France, and Dr. Atkins, of Las Vegas, New Mexico, both health officers of their respective localities. Recent personal inquiries in some of the boarding-places in the Adirondacks where consumptives congregate, outside the jurisdiction of the sanatorium, indicate, I am sorry to say, the same condition there.

And now, Mr. President and gentlemen, let us in conclusion treat the most difficult part of our discourse, that is to say, the social and economical aspect of the tubercul osisproblem.

Let us take for illustration a community of 1,000,000 inhabitants. With an average death rate of 25 per 1,000, one-fifth of whom die from tuberculosis, the community would lose 5,000 a year from this disease.

Some sanatoria claim as many as seventy per cent. of cures when the patients are admitted to treatment in the incipient stages, and I have reason to believe that these figures are exact, for pulmonary tuberculosis in the earlier stages is indeed one of the most curable of all chronic diseases. But let us presume a percentage of fifty only. Thus, if these 5,000 had been placed at the onset of their disease under proper treatment in sanatoria, 2,500 human lives would surely have been saved. Statistics have amply shown that tuberculosis is most prevalent among the poorer classes. The relation is about as two to one. So I believe that I am nearly right when I say that of those 5,000 over 3,000 at least are of the poorer classes, and of these 2,000 have died most likely in public institutions.

From personal experience gained in some of the larger general hospitals in Europe and in the United States I have learned that a tuberculous patient rarely makes a continuous stay in one hospital. He usually improves after his first sojourn and leaves, only to turn up after a few months in the same or another hospital for a second period of rest, and so on. But, all in all, the time he spends in general hospitals, to which which he is usually admitted when in the advanced stage, is rarely less than fifteen months.

According to the last published annual report of the commissioners of public charities and correction of the city of New York, for the year 1895, the daily expense per capita in the general hospitals of that city is $1.16. Thus the patient costs the municipality up to his death $522, aside from the money expended on the family of the patient, should the latter have been its only bread winner.

The general hospitals claim few cures of pulmonary tuberculosis, and it seems almost as if this money had been uselessly spent, since a general hospital cannot even be considered a safe place for isolating a consumptive. If the same patient had, for example, been treated at the Adirondack Cottage Sanatorium, or at a similar institution, and been sent there at an early period of his disease, he would have had sixty per cent. more chances of recovery, and would have cost only $1 a day, and that during a period of perhaps only six or nine months.

Thus two thousand tuberculous patients treated in the general hospitals in the city of New York, with very little chance of being cured, but with much chance of doing harm to their fellow-patients suffering from acute diseases, cost the city $1,044,000. Treated in sanatoria or special hospitals, with twenty to fifty per cent. of chances of recovery, according to the stage of their disease, and even if we should allow them just as long a stay in the special institution as we grant to the advanced cases in general hospitals, the cost would be only $890,000. Thus with a saving of at least $150,000 and the saving of hundreds of lives, countless centres of infection would be extinguished, which otherwise would endanger the families and neighbors of these tuberculous invalids.

But aside from that, think of the gain to the commonwealth by restoring to health the many bread winners whose families, under the present conditions, might become a burden to the community.

As stated above, these institutions should be open, not only to the poor, but also to those in moderate circumstances who can pay part of the expense. For this latter class of patients, many of whom for reasons of a noble feeling of independence hesitate to accept public aid, I have often wondered if a plan, something similar to the State invalidity insurance companies of Germany, could not be inaugurated in this country. There the moment an individual enters upon the career of an ordinary laborer or servant he is obliged to be insured against sickness, accidents, and old age. If he develops tuberculosis he is immediately sent to one of the many sanatoria of that country. The government authorities, who are at the head of this State insurance company, have long since learned that, through a timely treatment in a sanatorium, the tuberculous individual is most speedily and lastingly cured, and consequently with the least expense.

Dr. Weicker, of Goerbersdorf, to whose institution a great many such patients are sent by the government, writes me that the percentage of cures among these is higher than among the private patients. His latest statistics give a percentage of eighty of established cures, with only an average of seventy-six and one-half days of sojourn in the sanatorium. This marvellous result is to be explained by the fact that the government insurance officials send their patients to the sanatorium at much earlier periods than a private physician is likely to do.

Thirty-seven of these government insurance companies have, according to their published figures for 1897, collectively assisted 4,480 consumptives, of whom 4,432 were sent to subsidized sanatoria. Nearly all these State insurance companies contribute to the funds of such establishments; some have found it to their advantage to erect special sanatoria of their

own. For the year 1897 these State insurance societies of Germany invested altogether 1,300,000 marks in sanatoria for consumptives, and for 1898 a fund of between three and four millions has been destined for that purpose.

How would it be if one of our most thickly populated States, after having created a number of sanatoria, should try the experiment of a State insurance company against tuberculosis? How many families, even of the classes in fair circumstances but in which tuberculosis is dreaded on account of the disease having been the cause of the death of some of their members, would not gladly avail themselves of this opportunity—especially since the existing life insurance companies refuse applicants with a family history of tuberculosis? This opportunity, offered by the State, would mean giving to their children the certainty of being afforded the best possible chance of recovery, should they be taken down with the family disease. No matter at what age, as long as the individual remained insured, there would be the State sanatorium to receive and treat him. A payment of, for example, fifty cents a month from the birth of the child, would give to the State insurance company after fifteen years, with the accrued interest, a capital of nearly $150. By paying the aggregate amount up to the date of application, any predisposed individual might be insured at any time, and such an institution be called into life at once.

The greatest chance of a predisposed individual being taken sick is between the age of puberty and thirty. The chances of the disease becoming healed without ever having been discovered are between twenty and twenty-five per cent. I am in a position to verify this percentage by statistics which I compiled for my book on tuberculosis. Besides reviewing the vast literature on the subject I addressed three hundred letters of inquiry to the leading pathologists of the world, and as a result I can say that out of every one hundred autopsies made on people having died accidently, or of diseases other than tuberculosis, twenty to twenty-five showed evidences of healed tuberculous lesions (cicatrization or calcareous formation). The chances of this disease being cured in from six to nine months, if it is discovered at an early period, are at least fifty per cent. It is not necessary to be an insurance expert to see by these figures that the State would hardly be a great financial loser by creating such an insurance institution. But the greatest benefit which would accrue to the State or commonwealth through such an enterprise would be the paving of the way toward a complete State or municipal control of tuberculosis among the population which, owing to their social conditions, could otherwise not properly be cared for, and would constitute forever an impediment to the thorough prophylaxis and possible eradication of the disease.

To carry on the various State or municipal institutions to be erected, with a view to effectually stamping out tuberculosis, a large staff of competant physicians would be needed. These physicians should be paid for their labor. It is inevitable that through taking thousands of patients into such institutions the general practitioner will lose some of his income. Let the State compensate him by paying him for the service he may render in any of the institutions (sanatoria, hospitals, or special dispensaries) created by the State with the view of combating tuberculosis.

To proceed with this work as soon as possible, I should suggest transforming some especially favorably located general hospitals into special hospitals for consumptives. Create sanatoria for children on the seashore, for adults in mountainous or at least in elevated and healthy regions. If your State or provincial funds are not large enough to meet the demand, appeal to some of the many generous and patriotic philanthropists, whose hearts and hands are ever open when there is a question of saving American lives. In 1896 Vaughan, writing on the restriction of tuberculosis, said: "Of the 63,000,000 people living to-day in the United States, 9,000,000 or more will die of tuberculosis unless something is done to prevent it." Let us do that something—let us do it soon and let us do it well—so that with the dawn of the new century we may hope to see the tuberculosis problem solved, at least in North America; solved by the most humanitarian method, thanks to the combined efforts of physicans, statesmen, philanthropists, health officers of States, provinces, and cities, and the good will of an intelligent people.

PREGNANCY COMPLICATED BY KIDNEY AEFECTIONS.—E. H. Doughty, (*Am. Jour. of Gyn. and Obst.*) concludes that albuminuria appearing primarily in pregnancy may arise from:

1. Pressure on the renal veins or other vessels.
2. Pressure on the ureters.
3. Increased work of the kidney due to the excretion of the waste products of the fetus and enlarged uterus.
4. The generally increased arterial tension which is usual in pregnancy.
5. A reflex influence starting from the pregnant uterus as a source of irritation, and disturbing the circulation or the secretions of the kidney as that of the salivary and of the thyroid glands are in some cases disturbed.
6. The presence of a specific germ.

In cases where the kidney-trouble is of long standing and the albuminuria amounts to one-third, together with some edema, pregnancy should be at once terminated for the woman's sake, especially since the chance of a living child is very small, as premature labor almost certainly occurs. When, however, there is merely a temporary disturbance of the kidneys and their vascular system, the chances for mother and child are considered better, and pregnancy may be allowed to proceed.

CEREBRAL NEOPLASMS.—Krauss in the *New York Medical Journal* for July 30, considers the classic symptoms of brain tumor in their order of importance as: 1, head pain; 2, optic neuritis; 3, mental apathy; 4, nausea and vomiting; and 5, paralysis as a special localising symptom. The early symptoms are headache, incapacity for mental work, disordered digestion, nervous irritability, and a general malaise. Choked disk or optic neuritis he considers almost pathognomonic of cerebral tumor and a decisive symptom.—*Journ. Am. Med. Assoc'n.*

SURGERY.

IN CHARGE OF

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THE PRESENT POSITION OF SURGERY.

I. Its Scientific Aspect. II. Its Practical Aspect. III. Its Moral Aspect.

BY MR. THOMAS ANNANDALE.

It must at the outset be acknowledged—and acknowledged with gratitude—that the marvellous advances in connection with present surgical practice are largely indebted to those who have diligently, honestly and successfully carried on experimental and other research in connection with the sciences of chemistry, physiology, bacteriology, anatomy and pathology. We, as surgeons, look forward hopefully to receive the continued aid of these gentlemen in still further promoting our art, and it should be our duty to encourage and assist in every possible way all such scientific work, work that in connection with surgery can only be considered in its early infancy, and will require much care, accuracy and close industry to establish its steady and sure growth.

I would now refer to some of this scientific work that has so benefited surgical practice. To speak of the antiseptic system at the present time is to speak almost of ancient history, but two reasons prompt me to refer to it: First, because it was in the Edinburgh school that its distinguished author carried on those carefully conducted and original researches and experiments which led him to suggest this great principle. Secondly, because I have lived long enough to have had experience of three epochs in connection with surgical wounds. As a young apprentice, more than forty years ago, I witnessed the dressing of wounds by the application of layers of ointment, the edges being brought together by sutures of thick silk and the arteries secured by ligatures of the same material, the ends of the ligatures being left hanging out of the wound and acting much like setons. As a dresser under the great Syme I learnt the simpler methods of water-dressings and of dry-dressings; and lastly, as a as a pupil and colleague of Lister I had the good fortune to follow the various stages of the development of the antiseptic treatment. In the first of these epochs I gained a large experience in connection with septic suppuration, hospital gangrene, pyemia and septicemia, all of which con-

ditions were common and frequently led to fatal results. In the second epoch my experience of septic suppuration, pyemia and septicemia was small in comparison, but still too common. In my third and present epoch such experience has been reduced to a minimum.

In the early stages of the antiseptic suggestions, failures undoubtedly occurred, but such failures, when honestly investigated, were important as lessons, and the consideration of their cause did much to establish on a successful basis the great principle. There were some who, ignoring the principle of the antiseptic treatment, and also ignoring the established principles of surgery, preached and practised that the mere application of carbolic acid or other antiseptic lotion was all that was required, and when such treatment was unsuccessful condemned the whole system.

Let me quote a sentence from an address that I gave when appointed Professor of Clinical Surgery in this University, now twenty-one years ago: "It is not the mere application of carbolic acid in one form or another which constitutes the antiseptic treatment, but the true antiseptic surgery is that which is the result of many years' patient, thoughtful and scientific research; of vast, laborious and expensive experiments, and of much and valuable time spent in clinical observation on the part of Mr. Lister."

I confess that I was one of those who, while carefully watching the progress of Lister's work, and thoroughly believing and highly admiring his great scientific abilities, were at first cautious in accepting all the details of its practical application, because I felt that these were somewhat complicated; and it was certainly a great relief to my mind, and to the minds of many others I am sure, when it was found that in actual practice many of these details could with safety to the principle be much modified and simplified; and further, I had learnt from experience that even with the use of antiseptic treatment the ordinary principles of rest, avoiding causes of irritation and attention to the general health must not be ignored. I know that no one rejoiced more than Lister himself when it was proved that his great system could be successfully simplified, and so used under circumstances which formerly made it difficult or impossible to carry out.

But while the external application of antiseptic means and precautions is now thoroughly established upon a simple, and at the same time efficient, basis, it must not be forgotten that injurious organisms enter the body and tissues by other channels than through external wounds or breaches of surface; and therefore it is that the science of bacteriology becomes so important a study in connection with disease, and with the results of injuries and surgical procedures. It is to a further study and knowledge of this science—which must be considered as still in its infancy—that surgery, as well as medicine, looks for more light in connection with the causation and treatment of diseased conditions.

Although experimental and pathological research and clinical observation have already done something to explain and determine the action of certain organisms, the particular manner in which these organisms cause in one case no result, and in others injurious results, cannot be considered as proved. We certainly have learned certain facts: First, that organ-

isms of various kinds gain entrance into the tissues or organs of the body; secondly, that some special condition of these tissues and organs favors their development and multiplication. Such organisms vary much in form, source of origin, situation where chiefly met with, conditions under which they develop or are destroyed, and the special effects which they produce. In the majority of instances the bad effects are produced not so much by the multiplication of the organisms themselves as by poisons or toxins caused by their presence or behavior in connection with the tissues. Further, it would appear that the resulting toxin may not itself produce the poison, but give rise to chemical changes and products which are the real cause of the injurious results. It is also an interesting fact that the presence of more than one form of bacillus may either increase or destroy these injurious results.

The character of the tissues or soil in which the organisms settle has much to do with the results caused. Individualism, age, constitution, general condition of the patient and any local condition, more particularly any condition which interferes with the vitality of the tissues, influence much the actions of organisms. The resistance of the tissues to the injurious effects of organisms depends upon the condition of these tissues, upon the activity of the organisms, and upon the amount and virulence of the toxins developed. It appears that it is the spores of the organisms that most resist destruction, and as these spores may germinate not only in the tissues but outside the body, they act as a serious source of infection.

From the facts I have just stated it will be judged what difficulties arise in connection with the study of bacteriology, and consequently with the treatment of the injurious results produced by the numerous organisms which invade and affect the human body. Bacteriological experiments upon the lower animals may in some instances aid us, but the conditions of the lower animals are not always the same as those of human beings, and therefore results obtained in the former are not always safe guides as regards the results in the latter.

Continued careful study of antomy and pathology, and accurate clinical observation should do something to increase our knowledge, but I venture to think that much of our future trust for light must be in connection with physiologic chemistry, which we hope may be able to teach us more of the origin, causation and behavior of the various toxins, and of the action of the tissues in connection with them, so that we may be able to counteract their injurious effects by appropriate treatment.

At the present time we endeavor to treat the general effect of these toxins either by the administration of remedies supposed to produce a general antiseptic effect—but it cannot be said that such treatment has proved satisfactory except in a limited number of cases—or by the introduction int› the tissues, by subcutaneous injection, of so-called antitoxins. This latter treatment has met with an encouraging amount of success, especially in certain directions; but its position is still uncertain, and much further experience is required to place it on a safe and reliable foundation. All who have employed the antitoxins in connection with the surgical conditions must have encountered this uncertainty as to their

action. My own experience is that, though some severe cases of septicemia have recovered after the injection of an antitoxin; other cases very similar have recovered without any antitoxin being used.

I would suggest that another important subject for further study is the physiologic action or connection between one tissue or one organ and another. May not further experience help us in carrying out treatment based upon this connection? Take, for instance, the suggestion of Beatson for removing the ovaries in carcinoma of the female breast, incurable by other means. Having thought it my duty to test this suggestion, I carried it out in three typical cases, and my experience and the experience of others who have tried this procedure has been that, though the disease was not cured, the removal of the ovaries had certainly some influence upon the diseased local condition.

I venture also to suggest that as a possible and further addition to treatment some more careful work should be devoted to the action of drugs upon the toxins, such drugs being introduced either by the mouth, by subcutaneous or intravenus injection or by inhalation. We know that large quantities of saline fluid may be injected into the veins with safety, and it is therefore not unreasonable to suppose that other solutions of a non-irritating and antiseptic nature may be similarly employed.

The remarkable results obtained with thyroid extract should be an encouragement to us in this respect, and it has been already proved that certain vegetable products act as powerful antitoxins. If it can be discovered that certain drugs can be safely and successfully used as antitoxins it will much simplify our treatment, for such remedies would be more easily and more certainly handled than the antitoxins now in use.

The treatment of sarcoma or other new growths by means of toxins is another subject of great interest to the surgeon. The results obtained by Coley and others with the mixed toxins of streptococcus and prodigiosus do show some hopes, for under the use of these toxins growths have undoubtedly disappeared, but I think that all who practice surgery will agree with me when I say that sarcomas and other growths do occasionally undergo a check in their development, and even disappear without any apparent cause. In all probability these occasional occurrences are the result of some physiological or bacteriological action which is not perceptible.

Reference to the scientific aspect of surgery would not be complete without some notice of the "new photography." Ordinary photography has always been of great assistance to surgeons, and will continue to be so for the illustration, progress, and record of many of their cases, but its new and latest development has already proved to be of the greatest service in diagnosis, and consequently in connection with successful treatment, and an improved development of it will no doubt add still more to the success of surgical practice. The scope of this department of science is a very wide one, and by its means we may add much to our knowledge of osseous development and growth, of the relation and position of internal organs, and of the actual condition of diseased parts. In connection with many surgical conditions, and especially in connection with injuries of various kinds, this photography is invaluable.

In leaving this, the scientific portion of my address, I desire to again express the indebtedness of practical surgeons to those discoverers and workers in science who have by their honest and accurate observation obtained results which have done so much to improve our practice, and to render our treatment more successful.

THE PRACTICAL ASPECT.

The advances in our scientific knowledge, combined with extended and more accurate clinical observation, have, as has already been stated, assisted much in the improvement of practical surgery, and the development of what I would designate honest specialism must also be looked upon as adding to our practical resources and treatment.

If asked to define any special characteristic which will apply to the practice of surgery at the present day, I would be inclined to say simplicity—antisepticity, of course, being granted—a simplicity in which are included operative procedure, instrumental assistance, and after-treatment. It is true that from time to time new procedures and new instruments are suggested, but as a rule it will be found that if practical surgeons adopt and employ them they are in the direction of continued simplicity with some addition to their efficiency.

In a general address such as this a reference to all the improvements which have taken place, and are taking place, is quite unnecessary, as such improvements must be well known to all who desire to carry on with success the active practice of surgery.

For such knowledge we have not only our own experience to aid us, but we have to thank the medical press and the many distinguished authors, who, by their books and papers, bring the results of their own experience and observations and researches under the notice of the profession.

Although so many and so great changes have taken place as a result of the advances in the departments of science already referred to, it would be very wrong to ignore the work of those surgeons who are no longer with us. Many of these surgeons showed a knowledge and wisdom and forethought of conditions and procedures which have stood the test of time, and still remain sound and correct as monuments of their genius. This knowledge was principally the result of shrewd and careful clinical observation and reasoning, for they had little or no scientific aids to help them, and their success under such circumstances should be an example to all of us to make every use of our clinical opportunities and to observe closely, carefully, and honestly.

But the practice of surgery has not only reached a high standard of improvement; it has much widened its area both as regards the number of its procedures and the number of those who practice them. This is scarcely the time or place to discuss the exact relationship between surgery proper and what is called gynecology. Of late years these departments have been gradually merged into one another, so that the line of demarcation between them is scarcely apparent. Both are really surgical procedures, and both require for their proper and successful performance that training and those qualities which make the good surgeon. That

physicians under the designation of gynecologists should now become operating surgeons is perhaps only a little return for the fact that surgeons have so extensively and successfully invaded the province of physicians, and, as time goes on, some balance may perhaps be arrived at, which, while guarding the interests of the public, will satisfy the representatives of medicine and surgery.

In this greatly improved era of practical surgery it is well perhaps to suggest a caution, for there is undoubtedly a tendency—and more especially in the case of some of our younger colleagues—to be too ready to resort to surgical procedures. When greater risk was attached to operative procedures, surgeons young and old had, for the sake of their patients and their own reputations, to take into account these risks, even in comparatively slight operations; but now that so little risk attends operations, they may be undertaken without due consideration of all the circumstances or necessities of the case. I would, as a senior colleague, venture to remind my younger friends that nature, with perhaps some little non-operative treatment, will do much, and that no operative procedure should be suggested or practised until the case has been thoroughly studied and found to be unrelievable by other means.

As a practical surgeon in this, the Edinburgh School of Medicine, it may be expected that I should refer to my experience of anesthetics, and I accordingly express the opinion that chloroform holds the field as the best general anesthetic in connection with surgical procedures; and although I have met with a few fatal results from its administration, I have most thorough confidence in its safety if carefully used and it effects diligently watched. Perhaps the best test of my confidence is the fact that having a few years ago suffered from a poisoned finger, received when operating, I was required to take an anesthetic on several occasions, in order to have deep incisions made for the relief of extensive suppuration. The anesthetic I took was chloroform, and it was administered according to the 'open" method by one of my assistants, and not by any special anesthetist.

It is my opinion that fatal results will occasionally take place in connection with all anesthetics, and that these fatal cases may be divided into (1) avoidable, (2) unavoidable. The avoidable ones are those which are due to careless administration, or to neglect of means to prevent blood or other matters entering the air-passages, and should not occur if proper care is exercised. To avoid these risks it is essential that one person should give sole attention to the anesthetic and watch both respiration and pulse, more especially the respiration and its nature, during the whole period of its administration. I need scarcely say that the preparation of the patient before the anesthetic is employed, is, when possible, important. I prefer to give a small basin of plain soup about two hours before the chloroform is administered, and if the patient is feeble, or the operation likely to be attended with much shock, a table-spoonful or more of brandy or whisky a quarter of an hour before the anesthetic. In cases in which there is a risk of matters, and especially of blood, passing into the air-passages, the dependent position of the patient's head, as advocated by me in 1879, will often prevent this accident, and, should it take place, immediate tracheotomy must be resorted to if the symptoms are serious.

The unavoidable cases are, in my opinion, the result of heart-failure from fatty or other conditions, and occasionally I believe they may be caused by cerebral conditions, as I have seen a fatal case in which the symptoms resembled most an epileptic seizure. Further, I believe that in a majority of these unavoidable cases it is impossible by any external examination prior to giving the anesthetic to discover the condition which has led to the fatal result. I am inclined to think that the avoidable accidents are more frequent than the unavoidable, and, if so, it teaches us how important it is to avoid, by careful preparation and administration, anything likely to bring about an unfavorable result.

I would like here to give a word of warning as to the use of cocaine in local anesthesia, and more particularly when it is used by subcutaneous injection. My experience is that some individuals are especially susceptible to its action, and, therefore, if too strong a solution, or too large an amount of a weaker one is injected, the result may be faintness and serious interference with heart-action. It should, therefore, be used cautiously, and a stimulant be given, or be at hand in case of such symptoms occurring.

Not wishing to weary you, I close my remarks under this head by referring to the importance of taking carefully into consideration everything likely to influence the performance or result of any surgical procedure, and, when possible, to first remove by proper treatment, conditions likely to interfere with or retard the recovery of the patient. It is not age or apparent feebleness which is likely to cause anxiety, but it is the conditions of the organs and the tissues which should guide the surgeon, for if these be in a weak or a diseased state, they are more likely to become the soil for injurious bacteriological development and action.

THE MORAL ASPECT.

I make no apology for offering a few remarks under this head, with the explanation that I employ the term "moral" in its highest and widest sense, for I am decidedly of opinion that it becomes every member of our profession who has the true sense of relieving suffering humanity at heart, and who desires to maintain the honor and reputation of his profession, to speak out with no uncertain meaning in regard to every action which is dishonest or dishonorable or tends to be so. The actions and practices of so-called quacks or unqualified individuals are much to be deplored, and it is in every way desirable that legalised checks should be established so as to prevent or limit them, and more particularly in the case of the ignorant and uneducated public. If the educated public consult such practitioners—and it is not very uncommon for them to do so—they can only blame themselves should unfortunate results take place.

It is, however, of practices inside the profession of which I wish to speak. It is sincerely to be regretted that in some quarters the true, honest and high feeling which should be the standard principles of the members of our profession is in the present day partially or wholly ignored, and in consequence our profession is not always respected as it

should be, and its members are looked upon by some as mere humbugs, in some cases not without reason, thinking more of fees and fee accumulations than of their patient's cure or relief. Three causes seem to me to influence this much-to-be-lamented evil which has insidiously invaded our profession—(1) active competition; (2) untrained specialism; (3) society-demands.

There can be no doubt that the number of medical practitioners has increased, but in connection with the increase of the population, this increase in numbers is not so great as is generally supposed. A few years ago I collected statistics in connection with this question, and taking some of the largest provincial towns in England and Scotland, I found that the number of medical men, as compared with the population, was very little changed from what it had been twenty years before. The active competition, therefore, is in my opinion not so much due to the increase of medical men, as to the fact that in many instances the most of the remunerative work is done by a few, which leaves much hard work and poor pay for the remainder of the profession.

My suggestions for the cure of this are, that those who constitute the few should be specially careful to guard and encourage the interests of the many, should not seek to secure every remunerative appointment within their reach, but should at least leave some crumbs for their less fortunate brethren.

The second cause is untrained specialism. I have already stated that honest specialism has aided much the practice of surgery, and by honest, I mean such practice as is founded upon a thorough knowledge of all the different departments of the profession, and upon an honest study of all the circumstances connected with the various conditions which affect the organ or organs which are specialized.

Specialism in the hands of qualified members of the profession, unless practised under these conditions, is simply quackery, and quackery of the worst kind, for it is carried on by those whom the public understand to be properly educated as regards their profession. There are few who endeavor to practise their profession with integrity who have not met with cases in which mere symptoms have been treated by operation or otherwise, the real source of the diseased condition having been entirely ignored, either through ignorance or for reasons which can only be classed as contemptible and degrading to the profession.

The cure for such practices is not easy, and it can only be hoped that the honest members of the profession will note such practices and endeavor to check them by exposing their real nature, and by endeavoring with tact to educate the public mind to avoid those who practise them as unsafe and possibly dangerous advisers.

The third cause is society-demands. A section of the public, or I should rather say a section of what is termed "society," has done much to interfere with the proper feeling that should exist in our profession.

Men, women, and even young people, read and discuss professional matters and diseases; books are published and advertised which are written more to catch the eye of the public than to advance the knowledge or reputation of the profession; and a certain class of newspapers

and periodicals devote one or more columns to professional subjects, and even give gratuitous advice in the form of questions and answers.

The manners, qualifications and doings of members of the profession are freely criticized at afternoon teas and other entertainments. One man is condemned, and some supposed failures in treatment are magnified and invented, while another receives extravagant praise, and many of his wonderful surgical or other procedures are lauded, and not infrequently described with marvelous details added. One is glad to think that in the majority of instances the surgeon or specialist has no act or part in such proceedings, and having, with justice, confidence in his abilities and upright conduct, much regrets that they should exist and does all he can to prevent their occurrence.

But there are some, I fear, who take advantage of such extravagant popularity, and, having become the fashion, trade upon it in a manner which is not consistent with the high feelings which should influence all our professional relationships. It is fortunate that there still exist among the public in all classes of society many who are endowed with nature's nobility and good feelings, and who are not influenced by the extravagant or false opinions of fashion, but who have both respect and esteem for those members of the medical profession who conscientiously devote themselves to the relief of suffering.

We can all hope, but I fear hope in vain, that those members of society who lead a frivolous, useless, and sometimes unholy life, may some day realize that they are not acting as true citizens of their country, or taking any proper interest in the welfare of their countrymen and countrywomen.

If some of their energies, some of their time, some of their sympathy, and some of their money were employed to assist their fellow creatures, they would themselves reap reward by feeling that their lives were not altogether selfish existences.

If any member of our profession encourages or takes part in society's ignoble life or actions, he is not worthy to belong to the profession, and he certainly does not add to its reputation.

PRURITUS OF THE GENITALS.—Cumston (*Med. Record*, January 15, 1898, recommends the following:

℞ Menthol ..... 4 parts
Alcohol ..... 30 "
Aq. dist ..... 60 "
Dil. acetic acid ..... 150 "

Sig. Apply locally.

or

℞ Acid. carbolic ..... 5 parts
Hydrated potash ..... 2 "
Linseed oil ..... 30 "
Ol. bergamot, q. s.

Sig. Apply at bedtime.—*N. Y. Polyclinic.*

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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EARLY DIAGNOSIS OF INSANITY.—Early diagnosis is of the highest importance—not detailed differential diagnosis, but simply early detection of mental unsoundness. Has one to minister to a mind diseased, with a train of deceptive manifestations obscuring the truth, or with actual, tangible morbid conditions of the body, or with real extraneous relations, on the part of the patient, to other people and things? That is the first question. Insanity is a condition, due to disease, in which the faculty of judgment ceases to be guided by the experience of the individual in appreciating or accepting or directing or controlling or applying the operations of the other mental faculties in part or whole. In every case the individual should be fully studied, in order to determine what his mental action would be normally under given conditions—in other words, his normal mental experience. Failure to apply experience deliberately or automatically as a guide to action is a departure from the normal, and indicates morbid mental conditions—insanity. I know of no better guide in diagnosis than this rule, and, in a long association with the insane, have found it to be universally applicable. It matters not whether the person be congenitally defective or of the highest type of development. Insanity may be superadded to idiocy, and so may it disturb the most highly wrought mind. In either case an abdication of normal experience from the control of mental function, in whole or part, is the pathognomonic sign. Lack of apparent reasonable motive for acts or thought expressions is evidence, *prima facie*, of mental disease, and this rule suggests, in my judgment, the best primary test; but it is important that what would be reasonable to the individual in his normal state shall be used as the standard in any given case. The influence which unsoundness of body always exerts on soundness of mind must always be considered and used as a side light on the main question. Undulations of mental tone, due directly to somatic depression or excitement, must not be taken for insanity. A broad application of the forgoing principles will be a safeguard against any such erroneous conclusion. But, on the other hand, there are many morbid conditions of the body which do exert a most decided influence in causing true psychoses.—Dr. Jos. G. Rogers, Ph. D., M.D., Med. Supt. Ind. Hosp. for Insane, in *Ind. Med. Jour.*

SCHEME OF THREE LEVELS IN THE CEREBRUM.—In a recent address before the British Neurological Society (*British Medical Journal*, January 8, '98), J. Hughlings Jackson discussed the relations of different divisions of the central nervous system to one another and to parts of the body; the evolution of nervous centres, and the study of nervous maladies as dissolutions. A morphological scheme of the whole nervous system, he says, such as spinal cord and encephalon, is inadequate. We must have one based on degrees of directness and complexity with which nervous centres, or as he prefers to call them, levels, represent impressions and movements of parts of the body; an anatomical and not merely a morphological scheme. While he maintains that the lowest level is common to the cerebral and cerebellar sub-systems, he does not attempt any division of the cerebellum into levels. The lowest level extends, it is suggested, from the tuber cinereum to the conus medullaris; it being made up of sensory and motor centres of the cord, medulla, pons, and aqueduct—representing the body in detail. There are other centres of this level itself, presiding over respiration, intestinal action, defecation, micturition, the sexual act, parturition, etc.

The Rolantic region and prefrontal lobe are the motor provinces of, respectively, the middle and highest levels; the sensory provinces are not so well defined. The unit of constitution of the whole nervous system is sensori-motor, and also that in the middle and highest levels at least, the so-called motor provinces are only *chiefly motor*, and the sensor provinces are only *chiefly sensory*. In explaining the intermediation of common motor centres of the lowest level, he says the cerebellum represents movements of the skeletal muscles in the order, trunk, leg, arm, preponderatingly extensorwise; the cerebrum represents movements of the same muscles in an inverse order, preponderatingly flexorwise.

It is also supposed that impulses from motor centres of the higher levels of each subsystem continuously act upon the motor centres of the lowest level; that the impulses from each set of higher levels antagonize or inhibit one another in different degrees upon different lowest motor centres; that the degree with which the central and the cerebellar impulses antagonize one another corresponds to the degree of their different representation of muscular movements.

The relations of the cerebral and cerebellar subsystems to one another is otherwise explained by their having the lowest level in common; he compares and contrasts cerebral and cerebellar maladies with one another as being complementary inverses, as in case of extensive cerebellar paralysis (trunk, legs, arms), and rigidity as the corresponding opposite of the double hemiplegia (arms, legs, trunk), and rigidity of an advanced case of paralysis agitans; in the former the attitude is opisthotonic, in the latter slightly emprosthotonic.

The relations of the several levels to one another are manifested in the degree with which the organs of the digestive, circulatory, respiratory and thermal system, are represented by the lowest and highest levels.

The action of the emotions on the heart, and of the emotions and will on respiration, are illustrations of organic functions influenced by the

highest level; that is, by the anatomical sub-strata of states of consciousness.

He describes three factors in the regulation of the respiratory system: (1) Nervous regulation, through the respiratory centre; also by impulses ascending the vagi and by the high levels. (2) Mechanical regulation, from elasticity of lungs and costal cartilages. (3) Chemical stimuli—as effete nitrogenous products and deficiency of oxygen. There is a round-about relation between the lowest level and these highest levels; from high tension, less. It has been suggested by Greg, in his *Enigmas of Life*, that bodily pain and disease may directly contribute to the loftiest efforts of the intellect.

Venous blood may act as a "natural stimulant" of the respiratory and other centres of the lowest level; in severe cases of emphysema with bronchitis it is thought to annul the function of the lumbar centres concerned with the knee jerk. Asphyxia first exaggerates, and then causes loss of the knee jerk in dogs. There is greater activity in lower nervous arrangements of the highest level consequent on loss of function of the highest, caused by supervenous blood over action of the lower from the loss of control by the functionless highest.

He gives the following scale of fits: Lowest level fits, middle level fits (the epilepsy described by Bravais in 1827), and highest level fits (so-called idiopathic epilepsy). After a discussion of respiratory fits he concludes that, in comparison with the adult, the lowest level centres are in infancy little governed (positive motor), and little controlled (negative motor), by the highest levels; that the lowest centres are, in consequence, naturally healthily more excitable than in older people.

Following Herbert Spencer, he describes four factors in the evolutionary ascent: (1) increasing differentiation (greater complexity); (2) increasing specialization (greater definiteness); (3) increasing integration (greater width of representation); and (4) increasing co-operation (greater association).

He then submits a comparison and contrast between middle level and highest level fits as dependent on discharges of levels of different evolutionary rank. The middle level fits he calls epileptiform seizures, from a discharge lesion in the Rolandic region. Highest level convulsions are those of idiopathic epilepsy from discharge lesion of some part of the prefrontal lobe (motor province of the highest level). He concludes that there are certain differences in convulsions dependent upon difference in quantity of energy and on different rates of its liberation in each kind of fits.

In discussing dissolutions from disease, he would have us bear in mind not only the dissolution, which is effected by disease, but the evolution going on in the undamaged, healthy remainder. He illustrates with a case of insanity: "Whilst the negative affection of consciousness in every insanity answers to the dissolution, loss of so much, the positive mental symptoms, illusions, delusions, etc., signify evolution going on in the healthy remainder; going on in parts which disease has spared; going on in the lower, but now highest, range of evolution. The most complex, etc., nervous arrangements, centres and levels, are the least organized:

the most simple are the most organized. Thus the centres of the lowest level are much more strongly organized than those of the highest level. If the 'vital' centres of the lowest level were not strongly organized at birth life would not be possible; if the centres of the highest level ('mental centres') were not little organized and, *therefore, very modifiable*, we should make few new acquirements. The highest level is supposed to be less and less organized and, therefore, less and less automatic the higher the 'layer.' The highest layers are the least organized, least automatic and are attended by most vivid consciousness.

"The main elements of that part of mind which is commonly distinguished as intellect from the other part called emotion or feeling, are visual and tactual ideas and words. Much the greatest part of mentation, both in the sane and the insane, is carried on in visual ideas. He thinks that the physical basis of the psychical things we call words are audits—articulatory nervous arrangements and suggest that highly complex and special movements of the tongue, lips and palate are represented in the highest level. He concludes that taking into account not only the physical 'bases of visual and tactual ideas and of words, but also the vast number of connecting fibres implied by the innumerable combinations into which these ideas and words enter, that the motor province of the highest level, if not more voluminous, is yet more intricate than the motor province of the middle level; and that destruction-lesions of the former are more tolerable than equal-sized destruction-lesions of the latter; the reverse for discharge lesions."—J. U. Barnhill, *Periscope of Neurology.*

A patient suffering from *tabes dorsalis*, who recently came under the observation of Dr. Spiller, in the clinic for nervous diseases, presented in a very evident manner the sign known as "*giving way of the legs.*" He stated that while walking his knees, sometimes the right, sometimes the left, suddenly gave way and he was obliged to catch hold of some object to prevent himself from falling. He was always able to regain his equilibrium within a minute or two, and to continue his walk until the unpleasant event recurred. The sign was most evident when the patient was walking on uneven ground, but was not absent when he was on a level floor. His knees sometimes gave way when he first got out of bed in the morning.

Dr. Spiller states that this is not an uncommon sign of tabes dorsalis. The credit for making it known has been given to Buzzard. Charcot believed that is is often the first sign of transition from the pretabetic to the fully developed tabetic period. He did not think it is caused by a sudden sensation of pain in the lower limbs. The patient afflicted in this way has something of the feeling one experiences when he is unexpectedly struck behind the knees and finds his legs giving way under him. The cause of the sign is not well known. It cannot be the result of muscular weakness, for it occurs rather early in tabes and at a period of the disease when weakness is not very evident. It may possibly be due to the condition of the sensory nerves, which often early in the process are

unable to convey normal impulses to the spinal cord. It may be due to the fact that the impulses normally conveyed from the muscles about the knee joints are suddenly arrested, for some cause or other, and are unable, for the time being, to reach the spinal cord over the diseased sensory fibers. The patient in this way may lose all knowledge of the position of his limbs and standing erect, which is a position in which there is most perfect co-ordination of muscular movements, may become impossible. At best we can only theorize in giving any explanation for this sign.

BRIGHT'S DISEASE.

TREATMENT.—There is a good deal of mischief done by iron in Bright's disease. Basham's mixture in Bright's disease was never suggested for any directly curative purpose, but simply as a remedy for the anæmia which is so conspicuous a symptom in many cases, and for this purpose it still is and always will be useful. But not every case of Bright's disease is anæmic, and, as iron has no specific, curative effect, it is clearly not indicated in non-anæmic cases. Nay, more, it is often harmful. It may be laid down as a rule to which there is almost no exception that iron is not indicated, and should not be prescribed in cases of acute Bright's disease. On the other hand, after the acute symptoms have passed away and convalescence sets in, iron is often very useful.

A second class of cases in which iron is contraindicated is chronic intersititial nephritis, in which it is more promptly and dangerously harmful than in any other form known of Bright's disease.

The form of Bright's disease in which iron is best borne is chronic parenchymatous nephritis. And as this is apt to be associated with more or less anæmia it becomes a most valuable remedy in overcoming this symptom. Even here the doses given are usually needlessly large. The author's practice is to determine the proper dose by an examination of the stools, and if these are decidedly blackened, too much is being given. On the other hand, a slight coloration may be permitted. Basham's mixture is no more diuretic than the bulk of water which constitutes its menstruum. James Tyson (*Jour. Amer. Med. Assoc.*, July 23, '98).—*Sajons' Monthly Cyclopedia*, Sept. '98.

ALCOHOL INJECTIONS IN CANCER.—In the *Philadelphia Medical Journal* of May 28, Kuh makes a second contribution to this treatment. He reports cases and discusses the work of Hasse of Germany, in curing fifteen out of eighteen well authenticated breast cancers. He believes one may safely begin with 30 per cent. injections, increasing to 40 or 50 per cent., as the tolerance of the patient permits. He says that in cases in which the growth has become adherent to the pectoral muscle, Hasse always advised the operation, followed by alcohol injections, and again, all relapses should be treated or prevented by the injection method, as the pitiful insufficiency of surgery in relapses is too well known to be dwelt upon.—*Jour. Amer. Med. Assoc.*

NOSE AND THROAT.

IN CHARGE OF

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DIPHTHERIA TREATED BY ANTITOXIC SERUM IN UNIVERSITY COLLEGE HOSPITAL, LONDON, IN 1895, 1896, AND 1897.

BY SYDNEY MARTIN AND G. BERTRAM HUNT.

This very full report should be read by everyone who is still indisposed to use antitoxine. It is also valuable in settling some disputed points in the methods of use.

In all, 178 cases are reported in the two years. These are the total cases admitted to the diphtheritic wards of the hospital. Severe cases alone were taken in, especially those with laryngeal obstruction. In 149 cases the K.L. bacillus was found, and in eighteen repeated examinations failed to find it.

These latter cases are classed as diphtheria, on the ground of clinical symptoms or subsequent paralysis.

In all these cases a subcutaneous injection of anti-toxine was given within 12 to 24 hours after admission—the dose varying somewhat from time to time.

In 1896 the dose was between 2,000 and 20,000 normal units, with an average of 7200.

In 1897 the dose was between 4,000 and 12,000, with an average of 7,000 to 8,000.

The serum used was that of Sims Woodhead, of the Royal College of Physicians and Surgeons' laboratories, usually of a strengh of 4,000 normal units in 5 c.c.m.

[It is necessary to explain here that the serum used by us (as manufactured by P., D. & Co.) is of a different standard, this being 1,000 to 1,500 antitoxic units in 5 c.c. This would mean that the average dose in 1896 was approximately 1,800 units, and 1,750 to 2,000 units in 1897.—D. J. G. W.]

It is important to notice that local treatment was employed in almost all cases, varying from swabs of Chloride of Zinc ten grains in the ounce, to sprays of mercury bichloride, or douches of chlorine water, and in any case steam sprays of soda bicarb. were applied every two hours. This local treatment was given because of the frequent presence of pus and other septic micro-organisms besides the diptheritic bacillus, and was con-

sidered necessary for the attainment of the best results. When it was omitted glandular abscesses developed in the neck, which were not seen when antiseptics were again employed.

Tracheotomy was performed for laryngeal obstruction; in no case was intubation resorted to.

In discussing the effects on mortality, the averages of four pre-antitoxine years are compared with those of '95, '96, and '97, and care is taken to eliminate sources of error by classifying the cases according to age, the involvement of the larynx, and the day of disease on which the patient was admitted. It may be noticed that the percentage of the total number of cases under five years of age in the pre-antitoxine years averages 56, as compared with 64 in the antitoxine years. Again the percentage of the laryngeal cases to the total number averages 45 in the pre-antitoxine years, and only 34 in the antitoxine period. The above differences may be, therefore, offset against each other. The average of the day of admission was practically the same for both periods.

TABLE I.—*Mortality of All Cases.*

Year.	Age.	Laryngeal Cases.			Pharyngeal, Nasal, etc.			Total.		
		No. of Cases.	Deaths.	Percentage Mortality.	No. of Cases.	Deaths.	Percentage Mortality.	No. of Cases.	Deaths.	Percentage Mortality.
1891	5 years and under....	25	18	70.0	14	4	18.7	62	27	*43.5*
	Over 5 years.	5	3		18	2				
1892	5 years and under....	21	14	60.0	12	1	14.3	60	20	*33.3*
	Over 5 years.....	4	1		23	4				
1893	5 years and under....	32	24	78.0	26	6	10.9	105	39	*37.0*
	Over 5 years.....	9	8		38	1				
1894	5 years and under....	26	3	47.0	8	5	30.0	64	25	*39.0*
	Over 5 years	8	3		22	4				
1895 (1st antitoxin year.)	5 years and under....	23	7	33.3	25	10	24.4	75	21	*28.0*
	Over 5 years.....	7	3		20	1				
1896	5 years and under....	18	7	40.0	30	6	10.0	90	16	*17.7*
	Over 5 years.....	4	2		38	1				
1897	5 years and under....	24	6	23.5	29	7	13.0	88	15	*17.0*
	Over 5 years.....	10	2		25	—				

In the above cases there was an average of 32 tracheotomies per year, with an average death rate of 20 previous to 1895, while in the antitoxine period the cases averaged 24, with a death rate of 6.33 per year. In other words the mortality percentage is 64.5 without antitoxine, as compared with 26.4 after its use.

It is also noticed that the operation was done on admission or within 12 hours, and no case which, on admission, was free from laryngeal symptoms developed them in the hospital This amazing statement shows forcibly the power of the antitoxine to prevent the spread of the membrane.

CAUSE OF DEATH.

It is necessary to state the causes of death, and especially to examine closely for any indication of spread of membrane in fatal cases after the antitoxin injection has been given. Of the 31 fatal results during the last two years, 11 died between the third and eleventh days, with suppression of urine usually accompanied by severe vomiting, the typical toxic anuria of diphtheria. In all these cases the membrane had disappeared before death. It was at first asserted that the antitoxic treatment increased the mortality from this complication, yet larger experience has shown, as in the cases collected by the Committee of the Clinical Society, that the serum treatment has neither increased nor diminished the number of deaths from this complication; but as the deaths from other causes have been much reduced the deaths from toxic anuria probably bear a greater proportion to the total number of fatal cases, and so have come into greater prominence.

Among the other causes of death are, membrane in the bronchial tubes eight cases, all tracheotomized without complete relief; pneumonia, five; cardiac failure, two; gastro-enteritis, two; pneumo-thorax, one.

Nearly all of the fatal cases, except those dying within forty-eight hours of the commencement of treatment were free from membrane at the time of death, and in none was there any evidence of extension of the membrane after the injection.

In estimating the effects of the treatment according to the day in which it was used, the table given shows, as in other records, a marked lessening of the death rate *only* in such cases as were treated during the first four days of the disease.

The effects of the antitoxine on the temperature have been brought out clearly also; the dropping of the temperature to normal before the fourth day occurred in 83 per cent. of the cases, as compared with 48 per cent. in the pre-antitoxine days. All afebrile and fatal cases are included. The result is therefore the more striking.

The effect of antitoxine in preventing paralysis could not be estimated, as some cases developed it after leaving the hospital. The effects, also, on the duration of the membranes in the throat and on albuminuria were not estimated.

Of the evil effects of the administration of antitoxine, the report shows that rashes occurred in 49 cases; urticaria, 19; erythema, 16; papular, 14. Half of these occurred between the sixth and tenth day. Usually the rash caused no disturbance or uneasiness except itching. In 13 cases, however, the temperature rose, and in 4 there were joint pains with synovial effusion affecting large joints only. In 3 of these the temperature reached 104 degrees.

CONCLUSIONS.

1. The great reduction seen both in our total and tracheotomy mortality can be only due to the treatment with antitoxic serum, for the examination of the cases reveals no other factor capable of producing this result.

2. The full benefit of antitoxin was not obtained until fairly large doses (on an average between 7,000 and 8,000 normal units) were employed; the mortality then fell from 28 per cent. in the first antitoxin year to 17-7 and 17 per cent. in the next two years. Each case of diphtheria should have an initial dose of not less than 6,000 normal units.

3. Since antitoxin has but little effect on the mortality when given after the fourth day, it should be administered as soon as the patient is seen without waiting for the bacteriological diagnosis, and the full dose should be given immediately in one injection, not in divided doses on successive days.

4. Not only does antitoxin reduce the mortality, but it also distinctly lessens the severity of the disease in cases which recover. This is best shown by the effect on the duration of the fever, which in our series lasted only four days in a very much larger proportion of antitoxin than of pre-antitoxin cases.

5. The effect of antitoxin is chiefly seen in its specific action on the diphtheritic membrane, as shown by the cessation of its spread and more rapid clearance, and also by the greatly lessened mortality of such cases, in which the chief danger is from extension of membrane. The mortality of tracheotomy cases especially was reduced from 65.5 to 26.4 per cent., a greater reduction than seen in the other cases.

[*Abstracted from B.M.J., Sept. 3, '98.*—D. J. G. W.]

ŒSOPHAGOSCOPY.

KIRSTEIN (*Berl. klin. Woch*, July 4th, 1898) first refers to the history of œsophagoscopy, and its revival within the last two or three years. He mostly places the patient in the sitting posture, and does not use cocaine. Apart from such well-known contraindications as aneurysm, etc., the patient's neck may be stiff, or the mouth cannot be held open wide enough. There are a certain number of patients in whom œsophagoscopy is very easy; in others such an amount of force has to be used as to make it doubtful whether it should be employed. The difficulties all lie in the upper part of the œsophagus, but the tongue constitutes the chief obstacle. The tube of the œsophagoscope must press the tongue forwards or to one side. The author chiefly discusses the first form or median œsophagoscopy. The tongue may be so resistant that there is no possibility of pressing it down so as to obtain a view of the arytenoids which cover in the entrance into the œsophagus. If this is so, median œsophagoscopy is impossible. The œsophagoscope may strike against the vertebral column, and be with difficulty pushed on. If cocaine is used the dorsal surface of the epiglottis should be anæsthetised. The author maintains

that autoscopic examination shows whether it is possible to use the æsophagoscope. He finds that a portion of the cords must be visible by autoscopy, if the other instrument is to be used with ease. He thinks that some fourth of the cases lend themselves readily to œsophagoscopy. If the procedure is difficult, this does not mean absolute contraindication if the end to be obtained warrants the attempt. The lateral introduction, of the œsophagoscope has no real advantage over the median. Kirstein refers to the case of a sword-swallower, in whom he could easily see the whole of the larynx and the trachea and bronchi by autoscopy.

NATURAL IMMUNITY OF THE MUCOUS MEMBRANES OF THE RESPIRATORY TRACT.

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(PRELIMINARY REPORT.)

"Experimental pathology recognizes at present two kinds of immunity; the natural and the acquired. The natural immunity not only exists within our body, but it also shows its activity on the mucous membranes; this is plainly demonstrated by the fact that bacteria are constantly carried to the surface of the upper respiratory organs by inhaling as well as by introducing our food without producing any local or general infection in our healthy body. On the other hand, should we take any of these bacteria from normal mucous membranes and place them in proper culture media, we will observe a rapid multiplication: and if replaced in sufficient quantity on the original mucous membranes, they will produce a certain diseased condition of these tissues."

My own researches have shown that the comparative scantiness of bacteria in the nose is due only to mechanical (physiological) devices, and I have been convinced that the activity of bacteria, if not too many in number, is checked by a certain "biological" process—induced by chemotaxis.

The results of my own researches are:

1. The *natural resistance* of the mucous membranes depends principally on the "activity of leucocytes."

2. The *action of these leucocytes on bacteria* does not consist in their "total" destruction—as observed in disinfection either by heat or by a chemical (coagulation)—but it consists in greatly "diminishing their activity" to form poisonous products (toxines, etc.).

This is explained, that leucocytes produce "*enzymes*," which are able to "impair the chemical structure of the bacterium body." These enzymes have apparently no effect on albumin or albuminoid substances, but they are able at blood temperature to convert cane sugar into glucose and to influence fluid starch and cellulose.

Therefore the cytoplasmatic defense of mucous membranes consist in disabling the foreign cell in its activity, either to form poisonous products

or to enter their tissues. In other words, the bacteria are "slumbering" on the mucous membranes, just as we meet such "latent life" in the vegetable kingdom, and in this "inactive state" the bacteria are carried away from our mucous membranes by the secretions and excretions.

Woodhead quotes Müller, who found, that the *onset of post-diphtherial paralysis* was primarily in the muscles of the palate, then in those of the eye, the other muscles of the body, and finally in the muscles of the heart. These paralyses occur usually after the fourth day, but comparatively early. Experimentally, in addition to the lesions of the peripheral nerves, alterations in the cells of the spinal cord have been noted. Experimental paralyses are comparatively rare. They usually occur where the local reaction has been severe with production of a necrotic area. The majority of cases appear on the eighteenth to the twenty-third day after injection. Woodhead reports 13 cases of post-diphtheritic paralyses occurring in guinea-pigs in which it is evident that the date of onset bears no relation to the severity of the local process. The symptoms are an early, slight rise of temperature, followed, during the paralytic stage, by a fall. This appeared to be due to the injection of the albumoses. The author holds that the subject requires further study. In the discussion Mott reported the examination of the nervous and muscular tissues of 5 cases, finding fatty degeneration of the muscles and sometimes Wallerian degeneration of the nerves. Baginsky stated that he believed that post-diphtheritic paralysis was less common than formerly. In a case examined by his assistant advanced degeneration was found in all parts of the nervous system. Goodall stated that the paralyses had increased since the introduction of the antitoxin treatment, but ascribed this to the greater frequency of recovery. Woodhead, in concluding, believed that antitoxin could not of itself produce paralysis. Cases of paralysis are now less frequent and less severe than before the employment of antitoxin.—*British Med. Journal*, Sept. 3rd, and *Philadelphia Med. Journal.*

Robinson considers recurring attacks of inflammation of the lingual tonsil of frequent occurence even in small children. The failure to recognize the condition is due to ignorance or lack of skill or of attention. The difficulty of examination makes the condition hard to recognize in young children, in whom it is likely to be confused with the irritative cough of beginning pertussis. The causes are the same as those that give rise to faucial congestion or irritation. The symptoms are irritative frequent cough, with little or no expectoration in the beginning, frothy expectoration after each paroxysm in a day or two, and, finally, a small amount of tough, thick muco-purelent expectoration occasionally streaked with blood. The cough is likely to be worse on lying down. There is often a sense of stricture of the throat which may be unilateral or bilateral. There is neither fever nor soreness. Examination shows the lingual tonsil to be red and swollen. The left side of the tonsil is more frequently enlarged than the right. The condition occurs oftener in the female than in the male sex, and lasts from one to two weeks. The best treatment consists in local applications of equal parts of tincture of iodin, glycerin, and water applied twice daily. External counter-irritation by

blistering or compound tincture of iodin is valuable. The inhalation of warm antiseptic vapors of creosote or cresoline by means of a croup-kettle is valuable in treating children. In persistent cases a change of air to an interior locality is almost sure to be beneficial.—*Philadelphia Medical Journal.*

Dr. Alice Ewing (*Laryngoscope*) recommends iodoform gauze as a packing in suppurating ears to afford drainage in place of the douche. She says that one of her instructors in Vienna told her: "If you forget everything else you have heard from me, remember never to douche the traumatic-ruptured drum membrane; if you do, it is sure to suppurate; if you let it alone it is sure to heal. The infection is in the external auditory canal, and blood serum is in abundance from the contused tissue, but if left dry it soon desiccates."

Bichloride or borated gauze answers better in some cases. Dr. Ewing records two cases and in recapitulation says: (1) The gauze packing is more correct in principle and more satisfactory in practice than anything in use in the treatment of chronic suppurating otitis media. (2) Incurable cases can be kept more comfortable with this than anything else. It saves the time of the specialist. (3) It is suitable and safe for home treatment. It has no contraindications.—Editorial, in *Atlantic Medical Weekly.*

BERNAY'S ASEPTIC SPONGE—An artificial product composed of cotton fibre subjected to many hundred pounds pressure, has certain characteristics that make it especially fit for use in the nose and nasopharynx. The sponge may be rendered absolutely aseptic and, as its power of absorption continues, it becomes much increased in size, thus being able to exert pressure limited only by the limitations of the cavity in which it may be placed. For these reasons it is efficient in the control of hemorrhage in the anterior or posterior nares, either following operations or in severe forms of epistasis; it serves as an excellent splint in the later stage of the Asch operation, or in the treatment of fractures of the nasal bones. Finally it may be used for conveying medication to various portions of the nose, or for producing irritation and moisture in cases of atrophic rhinitis.—*N.Y. Medical Journal.*

TREATMENT OF SUPPURATION OF THE EAR BY PICRIC ACID.—Lanoix (*R vue médicale*, September 14th) states that picric acid, being not only analgesic and antiseptic, but also keratoplastic, he was led to employ it in suppuration of the ear, when it is sought especially to cauterize the secreting membrane of the tympanum. He has attained unhoped-for benefits from its use. He uses the following solution:

℞ Picric acid..... 3 grains;
Alcohol of 90° ..... 45 minims;
Distilled water ..... 300 "
M.

The solution is left for some minutes in contact with the ear. The treatment induces desquamation of the tympanum and of the meatus, which calls for frequent cleansings. This action of picric acid contraindicates its use in cholesteatoma.

PAEDIATRICS.

IN CHARGE OF

ALLEN M. BAINES, M.D., C.M.,

Physician, Victoria Hospital for Sick Children; Physician, Emergency Branch, Toronto General Hospital; Lecturer in Diseases of Children and in Clinical Medicine, Trinity Medical College. 194 Simcoe Street, and

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MORTI: THE DIAGNOSIS AND THERAPEUTIC VALUE OF THE LUMBAR PUNCTURE.

Archives fur Kinderheilkunde. B. xxiv., H., i, ii., 1898.

The report includes the author's observations made upon twenty-one cases.

Fifteen cases presented typical symptoms of basilar tubercular meningitis. Five were cases of epidemic cerebro-spinal meningitis, and one was a case of acute hydrocephalus following cerebro-spinal meningitis. Of the tubercular cases, two were punctured once each. Eight were punctured twice. Three were punctured four times.

The amount of fluid removed at one time varied from five to 115 c.c.m. In the majority the amount ranged from twenty to fifty c.c.m. In no case did harm result from the puncture. The operation was always performed under antiseptic precaution with antiseptic instruments. The fluid was not aspirated, but allowed to escape slowly or rapidly, depending upon the pressure. The fluid was always clear, and no tubercle bacilli was found in the specimens obtained.

Guinea pigs were inoculated into the peritoneum with the fluid from two of the tubercular cases. The temperature arose to 38° C., but subsided in a few days. In four weeks from the time of the inoculation the animals were killed and found to be free from tuberculosis. The effects of the withdrawal of the fluid were variable. The first puncture apparently exerted no influence on the pressure symptoms. In some of the cases, when considerable fluid had been removed, the stupor and the contracture were lessened, but returned in twenty-four to forty-eight hours.

In a few the temperature arose to 39° C., or 40° C., immediately after the puncture. The rise was temporary, however, and returned to the normal usually in twenty-four hours.

Inasmuch as the search for the tubercular bacilli in the cerebro-spinal fluid was negative, and the attempt at inoculation a failure, in cases that upon autopsy showed tubercular meningitis the author looks upon the Quincke puncture as of little diagnostic worth in tubercular meningitis. His results as a therapeutic measure were equally unsatisfactory.

Of considerably more value is the lumbar puncture in epidemic cerebro-spinal meningitis. The puncture was made in all five of the cases. In one only was it made for diagnostic purposes. In this case 10 c.c.m. was obtained. It was cloudy and contained pus cells. Through the means of a culture capsule-cocci were discovered. The autopsy confirmed the diagnosis. In another case two punctures were made at considerable intervals. At the first operation 15 c.c.m. of cloudy fluid was obtained which, upon microscopic examination and culture, showed pus cells and capsule-cocci. The case developed signs of hydrocephalus, and after an interval of several weeks the second puncture was made and 15 c.c.m. of clear fluid withdrawn, which proved to be negative.

The diagnosis of hydrocephalus was later confirmed in the autopsy.

In the third case two punctures were made in rapid succession. The fluid withdrawn was cloudy, showing the pus cells and the capsule-coccus. The second was opalescent and contained a few pus cells only. After an illness of eight months the child recovered.

In the fourth case two punctures were also made, the first during the second week of the illness. The fluid was cloudy and contained the pus cells and the capsule-coccus. Eight days later the second puncture was made, the fluid removed being clear, and containing no pus cells. The culture was also negative. After an interval of eight days the fever reappeared, and the child seemed to be quite ill generally, with symptoms of hydrocephalus. The nature of the symptoms was not given. The third puncture was now made, and 30 c.c.m. of fluid withdrawn. The examination was negative. The autopsy showed that the diagnosis of hydrocephalus was correct.

The fifth case recovered through the means of two punctures and internal medication. At the first puncture 30 c.c.m. of fluid was withdrawn containing pus cells. The culture was negative. Three days later the second puncture was made and 20 c.c.m. of clear fluid withdrawn. The medication consisted of sodium hydro-iodide and diuretin.

Puncture in the case of acute hydrocephalus following cerebro-spinal meningitis showed a clear fluid which was found negative in every respect. The autopsy on this case confirmed the diagnosis which was made unaided by the cerebro-spinal fluid. The author concludes as follows:

1. In tubercular meningitis the punctures were without diagnostic or therapeutic value.

2. In cerebro-spinal meningitis the examination of the cerebro-spinal fluid is of assistance in determining the diagnosis.

3. In cases of cerebro-spinal meningitis in which the acute stage is passed with resulting hydrocephalus, the examination of the cerebro-spinal fluid renders no assistance.

SURGERY.

Martin, Edward: A Statistical Study of Intussusception in Children, Based on Unreported Cases; Together with the Report of a Successful Operative Case. (*Therapeutic Gazette*, 1898. Vol. xxii., No. 6.)

The author believes that cases of intussusception are best classified under Raffinesque's system as ultra-acute, death taking place in the first twenty-four hours; acute, terminating between the first and seventh day; and subacute, lasting two weeks or upward. Invagination may be enteric, involving the small intestine only, or ileo-cæcal, the ileum and cæcum, together with the valve, being turned into the colon; ileo-colic, the ileum prolapsing through the ileo-cæcal valve, the latter retaining its proper position till secondary changes—it, together with the cæcum, is more or less displaced; colic, the invagination involving the colon only; and rectal, the seat of trouble being situated entirely within the rectum. Usually the upper segment of gut is received into the lower, but in Leichtenstern's 593 cases the reverse of this condition obtained in 1.5 per cent.

A retrograde intussusception secondary to the descending invagination is not so infrequent. In these cases the intussusceptum is surrounded by five layers of gut. This is probably due to a folding upon itself of the loose intestines and is said to occur only in the colon. It should be remembered that the intussusception may be double or triple.

Of many predisposing causes of intussusception, intestinal trauma (263 cases out of 593), polyp, especially that incident to a sudden jar or jolt, gastro-enteritis, and the straining incident to constipation, should take first rank.

The direct cause of chief importance is an irregularity in the nervous mechanism of the intestines which allows of a sudden spasmodic contraction of a portion of the bowel, while its adjoining conjunction may be entirely relaxed. This will apparently account for the intussusception of agony not rarely encountered in the course of *post-mortem* examination, and developed probably either during or immediately after the death struggle. These invaginations are often multiple, are limited in extent, and show no inflammatory changes.

The fact that obstructive invagination occurs in children, is associated with colic, is observed after abdominal injuries, and sometimes follows gastro-enteritis or typhoid fever, would all strongly suggest as probable causative factors disordered innervation.

After a very elaborate study of the subject the author believes that the conclusions which seem justifiable from a study of infantile intussusception are:

1. The affection is a rare one in any one locality or in any individual experience. The general impression among medical men to the effect that it is common has not the support of either hospital records, vital statistics, or personal inquiry.

2. Gastro-enteritis is a distinct predisposing factor.

3. The diagnosis of infantile intussusception from severe entero-colitis in the absence of tumor may be quite impossible. Fortunately tumor is present in over eighty per cent. of cases. Often it has not been found because search has not been made for it. Sudden and violent onset, frequent small blood-stained mucous passages, and the rapid minimizing of the quantity of feces passed, would suggest intussusception. Under such circumstances palpation should be practised, one finger being passed into the rectum, the other fingers of the other hand being applied to the ab

dominal surface. When there is reasonable doubt the child should be relaxed by ether before such examination is made. The tumor is not necessarily on the left side, being found in a small percentage of cases to the right.

4. The first attempt at reduction should be thorough and final. This is most likely to be successful if practiced upon the thoroughly anesthetized child. The method of choice is the slow injection of normal saline solution by gravity at a temperature of about 102°F. and under a pressure of at first four feet—not greater than eight feet after ten to fifteen minutes. Inversion and gentle massage aid in accomplishing reduction.

5. Reduction by injection should not be attempted in hyper-acute cases which have lasted more than twenty-four hours, nor in acute cases which have lasted twice this time. Immediate operation is safer for such cases.

6. Reduction by injection having failed, there should be immediate recourse to celiotomy and direct disinvagination, or if this procedure is impossible, ligation and resection of the adherent and sloughing mass practiced through a small incision through the intussuscipiens, and union of the divided bowel as in the Maunsell method. The portion of the gut cut away may be delivered through the anus.

ACNE VULGARIS.—As an alternative form of treatment in this troublesome disease, the following can be strongly recommended:

Direct the patient to carry out the usual course of shampooing the face with water, as hot as can be borne, and some bland un-irritating soap, and then, after carefully drying the skin, to apply the following lotion once a day:

Hydrargyri bi-chloridi	gr. xii
Spiritus vini recti	ʒ vi

The effect for the first few days will be, possibly, to render the condition worse, and make the part hyperæmic, but after this the lotion causes no discomfort and prevents the formation of postules.—G. Gordon Campbell, in *Montreal Medical Journal.*

MODERN BULLET WOUNDS.—"The destructive character of the bullets when they strike a hard surface was shown in the wounds treated during the recent riots in Milan," states the *Klin. Therap. Wochenschrift* of June 26. "Every arm or limb wounded had to be amputated; every person shot in the trunk died, and whenever the skull was struck, the top was lifted up like the cover of a box and the brain matter scattered around."—*Journ. Am. Med. Assoc.*

TO REMOVE A FOREIGN BODY FROM UNDER THE NAIL.—Alternately soften the nail with the end of a match dipped in caustic potash and scrape with a piece of glass until the object is reached.—*Journal de Méd. de Paris*, July 3.

As Sunlight is to Darkness

is the condition of the woman who has been relieved from some functional disturbance to her state before relief. Don't you know, Doctor, that there are few cases that pay the physician so well as those of women—and the Doctor that relieves one woman, lays the foundation for many more such cases—all women talk and your patient will tell her friends ASPAROLINE COMPOUND gives relief in all cases of functional disturbance—Leucorrhœa, Dysmenorrhœa, etc., and in the cases it does not cure it gives relief. We will send you enough ASPAROLINE COMPOUND—free—to treat one case.

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Editorial.

DOMINION REGISTRATION.

At the request of Dr. T. G. Roddick, of Montreal, several of the medical men of the city met in the Biological Buildings, Queen's Park, on October 22nd, to discuss with him some details of the scheme on which the Canadian Medical Association has been for so many years intermittently at work—the securing of Interprovincial Registration of medical licenses. There were present Doctors Mullin, of Hamilton; Geikie, Machell, Graham, A. A. Macdonald, Britton, Thorburn, Cassidy, I. H. Cameron, Williams of Ingersoll, R A. Pyne, Starr, Roddick, Fotheringham, Reeve, Spence, Dickson of Pembroke, McPhedran, and A. H. Wright. It will thus be seen that both the important medical teaching bodies of the city, and the Medical Council of the Province, were well represented.

Dr. Roddick in a very lucid manner gave the history of the movement, and submitted a sort of memorandum, prepared with great care with the advice of the best legal talent, including some of the Supreme Court Judges at Ottawa. In this it was made clear that the Provinces, having jurisdiction each only within its own domains, cannot legally do anything

in any matter educational calculated to affect matters of the same kind in another Province, so that only the Dominion Parliament can initiate and carry through such a scheme. And even it can do so only in one way, permissively, not with compulsion, not making an arrangement by which a license taken in one Province can be registered in another, this is clearly *ultra vires* of the Dominion authorities, but one by which, if the medical authorities of any or all of the Provinces so please, they may accept as valid within their own Province a certificate issued by a Dominion Board appointed by the Governor-General in Council. In other words, Interprovincial Registration being *ultra vires* of the Provinces, a Dominion Registration is to be sought to be established, which the Provinces may accept or not as they see fit,—retaining and exercising meantime all the functions which they at present fulfill. The details of the scheme, so far as they have been elaborated, must be left for future discussion, as, for instance, the standard to be fixed for such a certificate, both at matriculation, at primary and at final examinations; the most desirable mode of selecting the members of the Dominion Board; the effect of such a plan on the machinery now existing and on the revenues of the Provincial Councils; whether or not such legislation should be retroactive, and scores of similar questions, many of which it would almost seem to be necessary to work out in practice to discover the difficulties or complications to which they would lead. These details will come to light probably very soon.

In the meantime, the discussion, which was shared by nearly all present, revealed a remarkable unanimity of feeling as to the desirability of some such legislation, which will probably be introduced at the Dominion Parliament in due time by Dr. Roddick. The "Greater Britain" spirit prompts one to favor it, as the holder of the larger license would be placed on a par as regards British registration with the holder of the Australian and other colonial qualifications, which are accepted in Britain, while our probably superior ones are not because they are not issued by the central authority of the colonial unit. The same tendency to closer national and imperial union favors it, the spirit of disunion and provincialism is in marked popular disfavor at present, and long may it be so. Apart from the undoubted difficulties of detail, the general idea is, in our opinion, likely to be exceedingly well received by both profession and public at large.

SCHEME FOR THE ECONOMIC TREATMENT OF INEBRIATES.

In a aper on the treatment of pauper inebriates read by A. M. Rosebrugh, M.D., Toronto, at the recent meeting of the Canadian Medical Association, he recalls the fact that a Commission appointed by the Ontario Government in 1890 strongly recommended the establishment f one or more industrial reformatories for inebriates in the Province. This recommendation has been endorsed by the Ontario Medical Association as well as by a large number of other influential bodies. Notwithstanding this the Ontario Government declines to give effect to these recommendations on the ground that the number of inebriates in the province is so large that it would be impossible to undertake the

great expense involved in the erection of buildings and the maintenance of the inmates.

Under these circumstances, the Prisoners' Aid Association, of Canada, for some time past has been looking about for some plan less expensive that might be adopted at once for the scientific treatment of these unfortunates, pending the establishment of a reformatory or reformatories in Ontario. In January last, Dr. Rosebrugh was asked by the association to visit institutions, interview specialists, and, if possible, formulate a scheme for the economical treatment of pauper inebriates. This was done and the scheme submitted to the association.

The following is an outline of the plan proposed:—

1. The appointment by the Provincial Government of an inspector of inebriate institutions. This inspector should be a qualified medical practitioner who has made the medical treatment of inebriates a special study.

2. The inspector should organize in the city of Toronto, a hospital for the medical treatment of pauper male inebriates of the more hopeful class, and in other cities of the Province, an inebriate department in the existing general hospitals, more especially for pauper male inebriates.

3. An industrial reformatory should be established on the farm colony plan for the custody of the more hopeless or incorrigible class of male drunkards, and where they should be detained on indeterminate sentences.

4. In the adoption of scientific medical treatment, the Kerr-Crothers system or general plan of treatment is recommended. In the interests of science and good morals, proprietary remedies should not be used.

5. The adoption of the probation system and giving a helping hand to patients subsequent to treatment for inebriety.

6. In the case of habitual female drunkards, my recommendation is, that they be sent to the Provincial reformatory for the full term of two years, and that this be repeated in case of relapse. In the case of the more hopeful class of female drunkards, I recommend a few weeks' special treatment in any of the existing homes or refuges for females, followed up by subsequent judicious supervision. Arrangements to this end should be made by the Government Inspector, who should also inaugurate and have supervision of the "probation system."

As will be seen, there are two unique features in the scheme proposed; firstly, treating inebriate patients in the General Hospitals, and, secondly, the adoption of machinery for finding employment for and giving a helping hand to patients subsequent to treatment for inebriety. Reformed men cannot be expected to remain reformed if they fail to obtain employment.

The plan proposed involves the appointment by the Government of a Superintendent or Inspector, and the appointment of local agents for finding employment and giving a helping hand generally to reformed inebriates.

This scheme has not as yet been presented formally to the Ontario Government, but the Government Inspector of Hospitals, Prisons, etc., is understood to favor the plan. It is also endorsed by Dr. T. D. Crothers, of Hartford, Conn., and Dr. S. Lett, of Guelph, Ont.

Dr. Rosebrugh suggests that the proposed scheme be adopted in each of the other provinces of the Dominion.

Editorial Notes and Clippings.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION.

Again we desire to refer to the Library, and remind our city confreres that they have it within their power to make use of the volumes of the Association by the payment of a merely nominal fee, and that our country friends, by a post card to the Secretary, may do likewise at the mere cost of the express charges. In addition to this, the Library of the Surgeon General of the United States at Washington, the largest in the world, may. through the Ontario Medical Library, be consulted in the same way, For some time a substantial deposit has been kept in Washington to the credit of the Ontario Library, for the purpose of recouping it for the possible loss of any of its books. This arrangement has existed for some time, and yet few of the profession, except perhaps the officers of the Association, are aware of this fact, and also the easy manner in which they may consult the works of the largest medical library not only on this continent, but in the world, with little or no trouble or expense, the Secretaries of the two libraries doing all the work therewith.

The work and worry to the profession here in regard to consulting any book, or reading up any subject is reduced to a minimum, thanks to the energetic Secretary. It is not necessary for you to go yourself and look over shelf after shelf until you find what will help you. Simply write or telephone the subject you wish to investigate, and the Secretary will do the looking up and advise you promptly of the result. It is a great comfort at times to be able to lay one's hand on the latest literature bearing upon some particularly puzzling case.

A Lotion for Itching of the Anus.—

℞ Sodium hyposulphite..... 30 parts.
Carbolic acid ..... 5 "
Glycerine..... 20 "
Aq. dist.....450 "

M. Compresses wet with the solution are to be applied to the anus frequently.—Penzold, *Independance Medicale.—N. Y. Polyclinic.*

Otitis Media.—Bolt recommends in cases of purulent otitis media, where operative procedures are either contraindicated or not permitted, the following:

℞ Storax .....
Bals Peru.....aa grs. iv
Alcohol .....
Aqua distil .....aa ℥ ijss

M. Sig.—Drop into the ear p. r. n.

Book Reviews.

A Text Book of Materia Medica Therapeutics and Pharmacology. By George Frank Butler Ph G., M.D.. Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons etc., etc., Chicago. 2nd Edition, revised, 1898. Philadelphia, W. B Saunders. Toronto, J. A. Carveth & Co., Agents. Cloth, $4.00 : sheep and half morocco, $5.00.

One is struck at first, especially on reading the dedication, "to the medical students of the United States," at the outcropping again of that "little America" spirit which has produced "American Midwifery," "American Surgery," "American Dentistry," and so on through the whole list of those arts and sciences whose boast it should be that they are free from the trammels of time and space, and belong in fee simple to the whole world. But the book is a most useful one. The soundness and freedom from "ism" and "pathy" of the views enunciated in the preface are most refreshing, especially as coming from Chicago, whence they do we confess remind us of "the voice of one crying in the wilderness" The arrangement of the book is very excellent, based on drug-classes, not on disease-groups, and the erudition and accuracy of statement wh ch characterize the discussions upon each group and member of the group seem to be above the average. In Canada we should recommend it as a text book for third and fourth year, but should expect first and second year men to content themselves with the study of the more exact sciences of chemistry, pharmacy. and materia medica in preparation for the more deductive study of therapeutics. If any mistake of judgment has occurred in the work, it is in the attempt to combine these two sets of subjects, the one inductive purely, the other deductive. While the errors of Homœopathy, Christian Science, and other medical sectarians are properly condemned, one finds in the account of the action and uses of, for instance, Ipecac, new statements, such as have been made of the drugs by those hitherto held to be "irregulars." *e. g.* "Ipecac is not permissible for patients suffering from aneurysm, hernia, prolapse of uterus and rectum, etc." These statements should perhaps have been guarded by the explanation that no other emetic is either better or worse in the named conditions. J. T. F.

An American Text Book of Gynæcology, Medical and Surgical, for practitioners and students. edited by J. M. Baldy. M.D. Second edition revised, with 341 illustrations in the text, and 38 colored and half-tone plates. Philadelphia, W. D. Saunders. Toronto, Carveth & Co 1898.

In this new edition, rendered necessary by the ever advancing knowledge in this branch of medical service, the care has been to render the consideration of the subject as complete as is consistent with a c'ear enunciation of the practical working of gynæcology. The collaborateurs are Byford, Cragin, Etheridge, Goodell, Kelly, Krug, Montgomery, Pryor and Tuttle, all eminent teachers and operators. The chapters on technique and after treatment are wonderfully good ; but that, indeed, may be said of the whole work.

The typographical work is more than ordinarily good. The illustrations are clear, and relieve the letter-press of much cumbersome detail. Altogether, it is a work which will form a most valuable addition to any medical library. Pages, 718. Cloth, $8.00. Sheep or half morocco, $9.00. J. L. D.

The American Text Book of the Diseases of Children, by American teachers. Edited by Louis Starr, M.D., Consulting Pædiaist to the Maternity Hospital, etc., etc., Philadelphia. assisted by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania, etc , etc. Philadelphia, W. D. Saunders. Toronto Carveth & Co. 1898.

The Second Edition of Starr's already well-known work on Diseases of Children is to hand. It is larger by about fifty pages than the first edition, this increase in size being rendered necessary by new articles on Modified Milk, Lithæmia and a new section on Orthopædics. Many of the articles have been re-written, and much revision

has been made, thus bringing the work up to the very latest date in the field of pædiatrics. Among the names of the collaborat urs, of whom there are over sixty, chosen for especial fitness for the particular subject from among the greatest American teachers, we notice those of Ashurst, Blackader, Crandall, Da Costa, Musser, Pepper, Shattuck, Tyson, Thayer and others of almost equal note. This in itself should be a guarantee of the quality of work done, under the able editorship of Dr. Starr.

And when we come to examine the work, we are not disappointed. It seems all that could be desired, all that is necessary, in this important branch of the healing art, and we commend it to our readers, feeling well assured that their money will be well spent in securing it, and their time well employed in studying it. J. L D.

ELEMENTS OF HISTOLOGY. By. E. Klein. M.D., F.R.S., Lecturer on General Anatom and Physiology, and J. S. Edkins, M.A., M.D., Joint Lecturer and Demonstrator of Physiology, in the Medical College of St. Bartholomew Hospital, London

In one pocket size, 12 mo , volume of 500 pages with 296 illustrations. Lea Brothers & Co., Publishers, Philadelphia and New York.

The new edition of this neat little work has been issued, not before it was needed. The recent advances in our knowledge and methods of investigation of the minute anatomy of many of the body tissues, have put out of date all old editions and many works, not old editions, which appeared longer than a couple of years ago. The changes are seen particularly in connection with the "Cell," the "Blood," and the "Nervous System." While the authors have sought, evidently, to avoid anything that is, as yet, only speculative, they have given the histological facts which improved methods have brought to light in a concise form, thus supplying a sure foundation, on which one can build from time to time as good brick is supplied him. The number and general character of the illustrations has been greatly augmented by the addition of a large number of micro-photographs of high order. It is, however, to be regretted, that colors have not been used as in some other recent works, rendering the illustrations more realistic pictures of the stained sections they are intended to represent. F. F.

DISEASES OF WOMEN, by J. C. Webster, B A., M.D., F.R C P., Edin.—At a time when numerous books are being issued upon almost every phase of medical thought and practice, it is desirable to carefully distinguish between works which are original or necessary, and those which simply cover certain well-worn ground, in a fairly meritorious manner. Of the latter class is Dr. Webster's volume. It is a compend and condensation of other works, and treats the general subject no better than many others have done before, while portions of the book are distinctly inferior to the work of preceding authors along this line.

Taking up the details of the volume it is found, for instance, that while Chapter IV. is devoted to troubles connected with puberty, the climateric and menstruation, no hint of remedy or help in the disturbances described is given, and neither student nor practitioner can therefore benefit in practice from its perusal. The treatment of minor therapeutics is upon the whole poor. Very little is said in the work upon the value of electricity in many diseases or upon the proper use of pessaries, nor is much attention paid to medicinal remedies for the relief or cure of many of the minor troubles and discomforts dealt with. In Chapter XII the treatment given for diseases of fallopian tubes is poor, as it is not sufficiently considered from the pallative side, but only from the surgical.

On the other hand, the chapters treating of the methods of examination and the description and uses of instruments, are specially good for beginners. The portions dealing with bacteriology, asepsis and antiseptis, are fairly good, though more attention might have been paid to the methods of sterilization. Chapter X., dealing with the peritoneum and cellular tissues is of value. To summarize, the work may be described as perhaps useful in an elementary sense to students, but not to practitioners. Other works, however, have covered even the former ground better. It, in fact, attempts too much, slurs over many things which ought to be dealt with, and leaves out especially much essential curative and relief treatment. The volume, undoubtedly, shows industry and a degree of knowledge on the part of the author, and though, as already said, hardly reaching to the necessary standard as a manual for students and practitioners, it may still afford much useful information to those who desire it in a somewhat elementary form.

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PUBLISHERS' DEPARTMENT.

WET DRESSINGS IN SURGERY.

Presented in Section on Surgery and Anatomy at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898. By Thomas Osmond Summers, M.A., M.D., F.S. Sc., London, Professor of Anatomy and Orthopedic Surgery in the St. Louis College of Physicians and Surgeons, St. Louis, Mo.

This may well be called the "dressing period" in the evolution of surgery. Time was when the scapel alone was emblazoned on the escutcheon of the surgeon, and with the skilful incision his responsibility ended, nor did the dignity of his office admit of his performing what were then held as the minor and menial offices of "after treatment," which then was supposed to cover everything that followed upon the first brilliant sweep of the surgeon's glittering steel. There are no doubt some who hear me to-day who remember the dramatic toss of the knife behind him of the elder Gross when completing his incision, and the autocratic delivery of the case to his assistants for the dressing and treatment of the wound.

Even to this day the red, white and blue stripes of the barber pole tell of surgery's humble origin, and the bandagers and bone setters still roam through the villages of England, and the barber surgeons still apply the leech and cup for the more dignified practitioner. It remained for Sir Joseph Lister to break the spell of this *otium cum dignitate* which was the bane of all surgical progress, and teach the autocrats of the scapel that surgery meant much more to the organism than the mere solution of continuity along anatomical lines—that this indeed was the *avant courier* of the real principle from which all the almost miraculous achievements of modern surgery had been evolved. It was my privilege to be present at the presentation to the British Association, at Edinburgh, in 1875, by Professor Lister for the first time, of a clinical demonstration of his mode of surgical dressing, which opened to surgery new worlds to conquer. The case was one of ligation of the external iliac, and the elaborate dressings being removed, proved the triumph of his principle, though his venerable colleague, Professor Spence, almost on the verge of eternity, threw a well-poised Parthian lance at the rising genius of modern surgery. Since that day every operation, however simple in itself, has been one in which the surgeon "earned his bread by the sweat of his brow." No turning over the case to the unwashed student, for he whose records of success are proclaimed to-day is the operator who leaves not his patient until the last jot and tittle of aseptic dressing has been fulfilled, for so exacting is this principle that *falsus in uno, falsus in omni* is the inflexible law of its operation.

As a matter of course, with the increase of such labor necessary as it has proved to be to insure surgical success, the ingenuity of man was set to work at once to simplify the methods without impairing the efficiency of aseptic surgery. So active has been the work in this field that apparatus of every device and design has been offered to the profession until its name is legion, and of making of dressings, as the patriarch said of books, "there is no end." As in everything else, the element of "faddism" or surgical "fashion" has been dominant even in this unesthetic field,

and the very men who pretend above all others to condemn the follies of feminine fashion are themselves afraid to say their soul is their own when it comes to operating and dressing of wounds before their lynx-eyed professional rivals. For years past, for example, it had been almost as much as a surgeon's name was worth to apply oleaginous preparations to surface lesions, although the very first treatment of wounds of which we read recommends the "pouring of oil," and, in the case of the good Samaritan, received the endorsement of the Great Physician himself.

There are some things, however, that fashion cannot forbid, and this is one of them—like Banquo's ghost "it will not down." Long before science had thrown its searchlights over the dark field of biogenesis, experience had taught the steel-clad warrior the virtues of Gileads's balm, and, from the shades of Olivet, where fell the tears of Him who came for the healing of the nations, man had learned to gather the oil for his wounded body. Since the discovery of the bacteriologic processes of infection in open wounds, there has been a gradually growing tendency to return to the ancient remedial agents which experience dogmatically taught were rationally indicated. In the last edition of that eminently practical work upon surgery by Wyeth, of New York, we find this positive and significent utterance upon the use of oil and balsam, the first surgical dressings known to humanity: "I know of nothing equal to this valuable preparation. The oil acts in a twofold way—the surface of the wound is moistened by it, while the liquid excretion from the wounded surface is carried off in the dressing by capillary attraction. The removal of moisture ripples the proliferation of the bacteria, and in this way aids in antisepsis."

In the process of repair, all the structural elements must be supplied from beneath the surface of the lesions so that the constructive metabolism would not be injured by the mechanical interference of the oil globules, which, as intimated in the quotation just made, "would cripple the proliferation of bacteria" which come from without. There are many wet dressings, which, if frequently renewed, show excellent results, but there are few cases which come before us in which disturbance of dressing does not do mechanical injury to the process of repair, besides exposing the wound to the entrance of pyogenic and other cocci while the dressing is being changed; while the retention of material which has expended its aseptic influence is a constant menace to the integrity of the organism at large. Lister was working to the overcoming of these difficulties when he devised his "paste" dresssing which, however, failed to meet the desired ends in many cases. The use of animal and vegetable oils is also open to the objection offered to solutions in dressings—the necessity of changing the dressing too often—but for a different reason, the tendency of the oils to become rancid, and this applies also to the keeping of such dressings prepared for use. Wyeth recommends in his oil and balsam dressing the sterilization of the oil before using, but admits that this is often impracticable, and recommends in this case the use of plain, cold castor oil of the shops.

It is therefore clear that to carry out the idea of a practical dressing it must be:

1. Antiseptic. This applies not only to the effect of the application to the part effected, but to the corporate substance itself, thus insuring it against auto-infection before applying.

2. Permanent. This is necessary in order to avoid too frequent removals, as well as to preserve itself from deterioration.

3. Non-irritating. There is nothing more delicate, more easily disturbed than the formative principles of tissue, so that care must be taken in the dressing of all lesions of surface lest the agents used should arrest the tender process of repair, as well as protect it from the invasion of destructive germs.

4. Constructive. While the majority of lesions, especially those of traumatic origin, if not interfered with by destructive germs, will heal rapidly of themselves, there are very many which require, not only this negative condition, but also a positive stimulation of function in the constructive elements of the part. Stimulation of cell growth, however, must not go to the extent of irritation, in which case there will be destruction instead of construction of tissue.

The fulfilment of these conditions has been the aim of the surgical pharmacist from the time when the first coccus wriggled across the field of the microscope and gave its first exhibition to the scientific investigator of its dance of death within the organism of man. But, amid all this elaboration of apparatus, it was to Sir Astley Cooper after all that the credit is due, for his foreseeing therapy leapt over, as it were, the dark chasm which separated the triumphs of his surgical genius from the science-illumined land of modern surgical pathology. It was he who, without the knowledge of the bacteriologic factor in the great problem of surgical treatment, by the intuition of genius gave to us the essential principles of external dressing for surface lesions. His formula, however, was open to the objection of violating one of the conditions herein laid down—that of permanence—in that, lard was used instead of petrolatum, which has been since discovered and is now substituted in the preparation known as Unguentine, which is an ideal formula constructed along the lines of that suggested by Sir Astley Cooper, but altered to the conditions of modern aseptic surgery. The irritating effects of the ordinary alum has also in some way been obviated, furnishing thus a typical dressing for surface lesions. For internal lesions that are to be immediately and permanently closed beneath the sutured integument, there are many valuable aseptic liquid preparations which we prefer to the too indiscriminate use of iodoform, aristol *et id omne genus*, but we are free to admit that for all external dressings we have found the highest fulfilment of modern aseptic or antiseptic surgery in the preparation just mentioned.

I am not sure whether this is a proprietory preparation or not, but this I do know, its formula is an ideal one and its results are certainly very satisfactory. It is about time we were looking around after labor-saving methods when we have to employ, at the simplest incisive operations, an extra attendent to wipe the sweat from our brows as the houri fans the Sultan's heated cheek—though our attendants are not all houris, nor are our cheeks fired with the congestion of a lazy passion. We are glad to see this unholy war against oleaginous applications coming to an end, just as we should be also glad to see the phlebotomy pendulum point to the nadir. In surgical politics I am a middle-of-the-road man—*In medio tutissimus ibis.—The Journal of The American Medical Association.*

THOSE WHO SHOULD NOT USE ALCOHOL.

Dr. Clouston, of Morningside Asylum, Edinburg, says no one should use alcohol:

1. Who have any family history of drunkenness, insanity, or nervous disease.
2. Who have used alcohol to excess in childhood or youth.
3. Who are nervous, irritable, or badly nourished.
4. Who suffer from injuries to the head, gross diseases of the brain, and sunstroke.
5. Who suffer from great bodily weakness, particularly during convalescence from exhausting diseases.
6. Who are engaged in exciting or exhausting employments in bad air and surroundings in workshops and mines.
7. Who are solitary or lonely, and require amusement.
8. Who have little self-control, either hereditary or acquired.
9. Who suffer from brain weaknesses the result of senile degeneration.

MORPHINE HABIT CURED BY BROMIDE POISONING.

MacLeod (British Medical Journal) reports the case of a lady, aged 25, a victim of the morphine habit for seven years, who by mistake took eighteen drams of sodium bromide in forty-eight hours. This induced profound stupor, but five days later the bromide was resumed and continued for three days at the rate of two drams per day. She did not recover from the profound bromism for ten days, but then found her appetite for morphine entirely gone. Profiting by the experience of this case "cured by mistake," the author deliberately stupefied his next case of morphinomania with bromide taking about two weeks to withdraw the morphine and increase the dose of bromide of sodium from thirty grains every six hours to fifty grains every three hours. During the third week the patient was very stupid. The drug was stopped on the twentieth day, after which the patient practically slept for three days, and was unable to stand for a week longer. Five weeks after the cessation of the bromide he had completely recovered from its effects and had lost all desire for morphine and alcohol.

The following advantages are claimed for this method, based, it must be remembered, on only two cases:

1. It did away with the suffering entailed by stopping the drug.
2. The patient could not bribe the attendants when the drug was withdrawn, he could not deceive his doctor, nor could he escape vigilance —he was powerless.
3. It acted equally well whether the patient wished to be cured or not.
4. No special attendants or establishment were needed; only nurses who took ordinary care.
5. No violence or excitement is likely to result from, nor a taste to arise for, bromide given in this way.—*Medicine.*

The Canada Lancet.

VOL. XXXI.] TORONTO, DECEMBER, 1898. [No. 4.

ORIGINAL ARTICLES AND COMMUNICATIONS.

COCAINE ADDICTION AND ITS DIAGNOSIS.

BY STEPHEN LETT, M.D., M.C.P. AND S. ONT.

Medical Superintendent of the Homewood Retreat, Guelph, Ont.

Since the introduction of Cocaine some fifteen years ago, and its stimulating action when taken into the human system has become known, its seductive qualities have produced a widespread evil, resulting in a malady known as Cocaine addiction. The importance of an accurate diagnosis in this malady is second in importance only to that of opium addiction, and must be sought for in the physical and mental symptoms as well as by chemical analysis of the urine.

Most of those addicted to the use of the drug are neurotics, and like many such are always on the outlook for some medicine or stimulant to quiet their unstable nervous organization; these fall an easy prey to numerous proprietary medicines and medicinal wines, which owe their potency to the Erythoxylon Cocoa or its alkaloid Cocaine, and many an habitué can date the advent of his malady to these apparently innocent but subtle nostrums. The dentist, rhinologist and general practitioner have, by their prescriptions and applications, contributed their quota to the number of habitual Cocaine users. The alcoholic inebriate and opium habitué have also grasped at this once lauded panacea for the cure of their affliction, with the almost invariable result of failure to cure their disease, and usually resulting in a double and sometimes triple addiction.

The quantity of the drug consumed by those accustomed to its habitual use varies between wide limits. I have met with cases taking only a fraction of a grain, whilst in others it mounted up to sixty grains in twenty-four hours, and in one instance the limit was marked by the enormous amount of ninety grains a day.

The mode by which the drug is taken is as variable as the quantity consumed. It is taken by the mouth, sprays, snuffing, washes, etc., but chiefly by means of the hypodermic syringe.

The early physical manifestations of the malady are somewhat obscure and difficult to detect. The patient has perhaps been toying with the drug for a considerable period before a daily dose becomes a necessity. The early symptoms may, however, be noted as follows: A condition of unnatural buoyancy of spirits and self-confidence, exalted mental

action with an abnormal capacity for mental and physical exertion, wakefulness, loss of appetite, and apparently little or no necessity for food; bright and glistening eye with dilated pupil, which will not contract under the stimulus of light; the secretions are not dried up as in opium addiction, but the reverse usually obtains. As the disease becomes more established, most of these symptoms are accentuated; but, unless the stimulation is kept up by larger and more frequently repeated doses, intense physical and mental depression set in, leading to severe nervous agitation, fear of impending death frequently accompanied by lachrymosis; nutrition soon becomes impaired, accompanied by emaciation and anemia; sunken eyeballs with dark areola round the eyes, prominent cheek bones and general pallor make the subject a most ghastly spectacle. As the malady becomes more chronic, mental symptoms in the form of hallucinations and delusions supervene. Persons seen or heard at a distance are construed into bands of enemies plotting to rob, physically disable, or murder, and as a result the patient makes complaints and lays charges against innocent persons. All sorts of firearms and other deadly weapons are secreted within easy reach as a protection, and are apt to be used with serious results. Apartments are barricaded to prevent imaginary enemies pouncing in to do bodily harm or carry him off to a prison or dungeon. The key-hole and other small apertures or crevices are chinked to prevent anyone from seeing into the room or forcing noxious gases at him. Aural and visual hallucinations are also present. Added to all this we have what has been termed the "Cocaine microbe," not the material microbe met with in other diseases, which can be demonstrated under the microscope, but an imaginary body which the patient believes to be real, usually assuming the form of minute worms and insects situated under the skin, so that he will mutilate his body, especially his hands and fingers, trying to dig them out with the point of a penknife or other suitable sharp-pointed instrument.

When the hypodermic syringe is used as the means of taking the drug, the skin where the needle is inserted soon becomes indurated and its texture changed so that, in course of time, it becomes leathery—almost impossible to force the needle through—and with the constant dosage, the skin on the arms, fore-arms, legs, thighs and hips becomes so thickened, hardened, discolored and altered in its texture that it is almost impossible to find a suitable point to insert the needle, upon the withdrawal of which the skin, lacking contractile power, fails to close the puncture, and much of the fluid injected is apt to spurt out, causing considerable loss and the necessity for another injection. When a strong solution of Cocaine is used the skin becomes disorganized, ulcers form, varying in size from a small pea to large areas of integument. I have seen ulcers so caused measuring six inches in length by an average of two in diameter without a particle of skin being present. It is quite true that the habitual use of morphia, hypodermically administered, will produce a similar induration, but the action of morphia in this respect is mild as compared with that of Cocaine. The Cocaine habituate is totally unfit for his ordinary avocations; his work, if done at all, is performed in a most erratic and unsatisfactory way and much neglected.

When the above train of symptoms is present it is not difficult to make a correct diagnosis; but, in the early stages of the malady, many are absent and those present are not always noted, if observed, not correctly interpreted, especially in the face of the most positive denial of fact by the patient. By means of urinary analysis, any doubts that may exist can be dispelled.

The method by which I have succeeded in extracting this alkaloid from the urine of those using the drug is as follows: To a suitable quantity of urine (10 to 20 ounces) add sodium, or potassium carbonate, until the mixture is very distinctly alkaline; let it stand for half-an-hour and filter; to the filtrate add ℥ij pure sulphuric ether, agitate quietly for two or three minutes then allow it to settle for half-an-hour; draw off the ether and add to it ℥j, dilute hydro-chloric acid (M. × to ℥j), thoroughly mix, place in an open dish and permit the ether to evaporate spontaneously; apply gentle heat to effect perfect solution of any alkaloid that may be floating on the surface or adherent to the sides of the vessel; let it then cool, the remaining liquid may now be tested for the hydrochlorate of Cocaine by any of the reliable tests for this salt. The following are quite satisfactory.

TER. CHLORIDE OF GOLD TEST.

To the solution thus obtained add a few drops solution ter. chloride of gold (Gr. X to ℥i); if Cocaine be present a yellow, or yellowish-white, precipitate will at once be formed, which is dissolved by heat, especially in the presence of a little free acid; upon boiling the vapor given off will have the pungent and somewhat acrid though pleasant and characteristic odor of benzoic acid. The mixture can now be divided into two parts. One part is left in a test tube to cool and reprecipitate. To the other add oxalate of ammonia which will throw down the gold; filter and test the filtrate with neutral chloride of iron; a change of color to a deeper shade indicates benzoic acid in small quantities; a flesh colored precipitate indicates the presence of benzoic acid in larger proportions.

The mixture left in the test tube to cool will now have thrown down a yellow precipitate which can be collected and submitted to sublimation when the distinctive odor of benzoic acid will be noted, and the sublimate examined under the microscope for the beautiful feathery crystals of this acid. These tests show the presence or absence of benzoic acid; if present it could only come from the presence of Cocaine in the urine examined.

MYERS' REAGENT TEST.

To a portion of the residue left from the ether evaporation add a few drops of this test reagent, a white precipitate will at once be formed, if Cocaine is present, which dissolves by heat, and upon cooling throws down yellow crystals, which under the microscope (⅙ objective) appear as depicted in Fig. I. If there is an excess of the precipitate the undissolved portion will fuse into yellow gummy masses upon boiling. In following out the test with Myers' reagent, should the patient be taking quinine,* it will first be necessary to precipitate this alkaloid from the

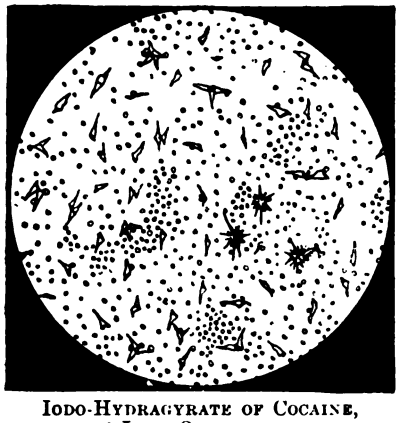
*(A small portion of the liquid may be tested for quinine by the chlorine water and ammonia test. The absence of the Thalleochin reaction renders the use of picric acid unnecessary.)

solution to be tested by picric acid in excess, filter and make the test with the filtrate thus obtained. The limit of Myers' reagent appears to be about 1 part of Cocaine in 30,000 of water.

The following is an example of detection, both Morphia and Cocaine, in a case of double addiction. The patient at the time was taking gr. xv. Morphia Sulph and gr. iv. Cocaine hydro-chlorate every 24 hours. Eight ounces of the urine voided was used, acid reaction, this was concentrated over a water bath to ℥ ii., and allowed to stand twelve hours, then filtered, filtrate rendered alkaline by potassium carbonate, thoroughly agitated and let stand for twenty hours, then filtered. This filrate was treated as above directed for the extraction of Cocaine, and tested by Myers' reagent, giving very satisfactory results—forming crystals of the small round character depicted in Fig. 1. The large crystals seen in this figure were not obtained, as the solution was too weak. The precipitate left in the filter was treated for the extraction of morphia by the process described by myself a short time ago,* and yielded unmistakable reactions by the following tests: Nitric acid; Iodic acid and chloroform; Ferricyanide of Potassium and Ferric Chloride:

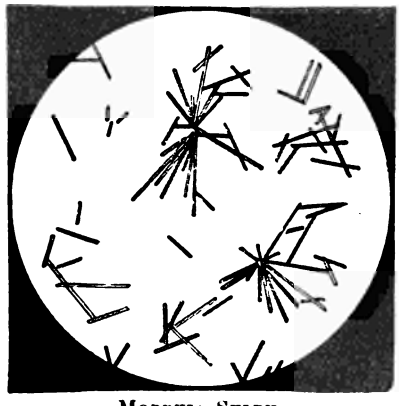
Upon permitting a few drops of the residue left from the alcoholic extract in the presence of a small amount of dilute sulphuric acid to evaporate spontaneously on a glass slide the beautiful large crystals of Morphia Sulph seen in Fig. II. were obtained.

FIG. I.



IODO-HYDRAGYRATE OF COCAINE, ⅛ INCH OBJECTIVE.

FIG. II.



MORPHIA SULPH., 1 INCH OBJECTIVE.

NOTE.—That in precipitating the alkaloid Cocaine by the alkaline carbonates this alkaloid is soluble in an excess of the precipitant, and must be looked for in the filtrate, and not in the precipitant—the reverse obtains with alkaloid Morphia.

Vide CANADA LANCET, August 1st, 1898.

MEDICINE.

IN CHARGE OF

N. A. POWELL, M.D.,

Professor of Medical Jurisprudence and Lecturer on Clinical Surgery, Trinity Medical College; Surgeon to the Hospital for Sick Children, and to the Emergency Branch, Toronto General Hospital; Professor of Surgery, Ontario Medical College for Women. 167 College St.; and

WILLIAM BRITTON, M.D., 17 Isabella Street.

SCHLEICH'S GENERAL ANÆSTHESIA NOT A SUCCESS.

BY H. RODMAN, M.D., NEW YORK CITY.

Soon after the Schleich method was introduced into this country from abroad, where it was reported to have met with such great success, it was decided to give it a fair and thorough trial in Mount Sinai Hospital, where I had the opportunity of carefully observing the administration of the above anæsthetic and of studying the effects of the same upon the general condition and well-being of the patient after operation.

Although comparatively recent, other hospitals in this city had published such very favorable results concerning the new anæsthetic and its safe administration that we began to use it, at first rather cautiously, but soon extensively—in fact, substituting it for ether and chloroform almost altogether.

Of the solutions employed, known as Nos. 1, 2, and 3, the last was used in the vast majority of cases; No. 2 being employed for patients with serious heart lesions, and No. 1 for children under ten years of age, usually.

The anæsthesia was conducted under the most favorable circumstances, the solutions being carefully prepared by our druggist and known to be chemically pure, and the anæsthetists were reliable and experienced men.

From personal observation of seven hundred cases, the report of which is entirely unprejudiced, I submit the following facts:

Firstly. *(a)* Regarding the mixture itself, the general consensus of patients is that it is not unpleasant to inhale, and those who have taken ether much prefer the former to the latter; on the other hand, the Schleich mixture does not possess this advantage over chloroform.

(b) The length of time required for the Schleich mixture is from fifteen to twenty minutes, rarely less and occasionally more. Ether requires about the same time; chloroform, from five to fifteen minutes.

(c) The mask employed is a serious disadvantage, as the Schleich mixture contains both ether and chloroform among other ingredients, and the mask must be so constructed as to allow sufficient inhalation of ether while diluting the chloroform sufficiently with air. The mask requires

thorough saturation at the beginning of the anæsthesia, and the fluid often trickles down on the patient's face, causing severe burns, several of which I have noted; but this can probably be obviated with a suitable mechanical contrivance.

(*d*) The stage of excitement is less marked (though present) than with ether or chloroform, although occasionally pronounced; general relaxation is present to a greater degree than with ether.

(*e*) Irritation of the mucous membranes, especially of those lining the respiratory and alimentary tracts, during the administration of the anæsthetic is diminished with the Schleich mixture.

Secondly. During the administration of the Schleich mixture the reflexes are lost early, especially the conjunctival reflex, thereby depriving the anæsthetist of one of his most important safeguards. The patient's pulse remains slow throughout, and in the majority of cases which I have seen he assumes a generally cyanotic condition, respirations usually diminishing and the pupils being somewhat dilated. At this stage of the anæsthesia, if not carefully guarded against, general cyanosis increases, respirations become infrequent and shallow, the pulse loses quality, increasing in frequency, and the patient suddenly stops breathing, respiratory failure having ensued, and this without much warning of any kind. I have witnessed certainly half a dozen of such conditions, which included two operations for inguinal hernia, two general laparotomies, one operation for osteomyelitis of the femur, and one for hemorrhoids. In all these cases the face was markedly congested, the reflexes were absolutely absent, the hands and feet were perfectly blue and cold, but the pulse was always perceptible, though slow and feeble and at times intermittent. Artificial respiration was always resorted to, and respiratory and cardiac stimulants, such as strychnine, digitalis, atropine, and whiskey were at once administered hypodermically and per rectum. All of these patients, however, recovered after energetic measures were employed.

I must also mention the case of a man, fifty-five years old, on whom an enucleation was being performed, whose previous health had been good, who had neither heart nor lung lesions, breathing regularly and slowly, who had taken his anæsthetic without any difficulty, and with an experienced anæsthetist at his head. Suddenly he ceased breathing, his countenance assuming a pale and waxy hue; his radial pulse was entirely imperceptible for two minutes at least, although his heart could be heard beating very slowly and feebly, about 15 to the minute. Another interesting feature observed was that there was no hemorrhage whatever on removal of the eyeball, which was almost coincident with the collapse of the patient. The anæsthetic was, of course, immediately withdrawn, amyl nitrite was applied to the nostrils, and heart stimulants were injected; the chest, particularly the cardiac area, was vigorously pounded with towels dipped in cold solution, ether also being poured over the same region. The pulse thereupon slowly resumed its original character, but not before fifteen minutes had elapsed, and the patient began to breathe more frequently (no Magendie had been administered, either before or during the anæsthesia), and subsequently fully recovered from this attack. I have witnessed several cases of respiratory failure from ether and chloroform,

but never cardiac, as this undoubtedly was. I am led to believe that the unconscious state approaches an extreme condition with the Schleich mixture—much more so than with ether or chloroform.

Thirdly. Direct after effects. Patients gag and vomit to almost the same extent as with ether or chloroform, which is also contrary to what has been claimed for Schleich's mixture as an advantage. The discomfort after operation is quite as marked; it is rather the exception to note otherwise.

The period of awakening from the influence of the anæsthetic is not shortened with the Schleich mixture No. 3, as has been affirmed by some, who claimed that as soon as the operation was over and the anæsthetic removed, but a few moments elapsed before full return to consciousness; this has seldom been the rule.

Fourthly. Effect upon the lungs and kidneys. We had long sought and earnestly prayed for an anæsthetic which would eliminate the dangers to these viscera subsequent to anæsthesia. Has the Schleich method obviated these dangers? Certainly not, as will be proven by the following:—

Several of the patients developed bronchitis, which was followed by pneumonia in some instances. One in particular which I remember was that of a young woman who, the day after operation, developed bronchopneumonia, which at the end of two weeks proved fatal. I have also observed several patients with conjunctivitis and rhinitis after Schleich anæsthesia.

Again, I have noted at least three instances in which the urine of the patient, previous to operation, was perfectly negative, and which after operation contained albumin and casts, proving thereby that the Schleich mixture must necessarily be an irritant to the kidney. The Schleich method has not obviated or lessened the above unfortunate results due to general anæsthesia.

From the foregoing remarks I must therefore conclude that Schleich's solution does not even maintain a position between ether and chloroform, as I was led to believe from the early series of cases, but must foot the others. It is certainly less free from danger than ether and even chloroform, in my experience. It produces the same baneful effects upon the lungs and kidneys, and is a marked respiratory and cardiac depressant. Whether this is due to chloroform in combination with the other ingredients or not, I cannot say, but certainly chloroform alone can be administered more scientifically and with greater exactness than when in solution with other elements, as it is in Schleich's mixture.

The only advantage of the Schleich mixture is its pleasant inhalation, although it is often disagreeable to the surgeon and the bystander. With ether this can be modified by preceding the ether inhalation with a few whiffs of chloroform.

It has been claimed that the Schleich mixture can be administered with safety in serious heart lesions. The incident I have mentioned above disproves this statement, and in a patient with a perfectly sound heart; whereas I have seen chloroform administered in severe cardiac disease without bad results.

I must also add that, owing to the above poor results, we are gradually withdrawing the Schleich mixture from the operating field and returning to our old friend and standby—chloroform.

Since leaving the hospital, I have learned that the Schleich method has been practically abandoned, and one of our leading surgeons has pronounced it to be an utter failure; also, one of its strongest advocates on its introduction into this country is thoroughly disappointed with its results.

I feel that the foregoing remarks will be substantiated and strengthened by future experiences, and that the Schleich method will be relegated to where it belongs in the order of efficiency.

I am indebted to Dr. A. G. Gerster for kind permission to use the statistics upon which this article is based.

SELECTION OF FOOD FOR THE SICK.

"The selection of diet," says Dr. James Tyson, *University Medical Magazine*, "depends upon, first, the chemical composition of the food; second, its physical composition as contrasted with its chemical; third, the mode of preparation; fourth, the experience both of physician and of patient.

"Food is divided according to its composition into proteids, carbohydrates, hydrocarbons, and minerals, including water, and a certain proportion of these sets of elements is contained in every sort of food, animal and vegetable as well. Meats contain more proteids, vegetables more carbohydrates. The hydrocarbons are represented by the fats. The first tend particularly to tissue making. On the other hand, the carbohydrates and hydrocarbons are force-producers.

"The physical properties of food vary greatly. Vegetable foods are less digestible, in that they leave more refuse matter—an advantage or a disadvantage according to conditions. Thus vegetable foods, for the reason that the large residue unabsorbed in the bowel acts more or less as an irritant, become useful in constipation. On the other hand, in an irritation of the bowel, the conditions call for foods which have the least amount of waste, and are therefore bland and unirritating.

"The mode of preparation of food has a great deal to do with its availability in sickness as well as in health. Very few foods are best taken raw. Of animal foods, the oyster is, perhaps, the only one. The nearer the oyster is to being raw, the more easily digested it is, since it contains at once a sugar and a diastasic ferment, the union of which is brought about by eating, and the oyster thus, as it were, digests itself. If an oyster is cooked, this self-digestive power is lost. Of vegetables, except fruits, none are fit to be taken raw. Cooking is necessary to make them in any way digestible, particularly the starches, which are thus rendered vulnerable to the digestive diastasic ferments. Fruits, though there are many which may be eaten raw, also become more easily assimilated when cooked. This is true of peaches, pears, apples, berries, and the like. The mode of preparation includes an infinite variety of methods of improving

the flavor and digestibility of foods which belong to the province of the cook.

"Experience, after all, is the most valuable practical criterion of the propriety of a food. The first direction to patients in regard to eating is: 'Whatever does not agree with you, that do not eat.' It is evident that this will eliminate at once a considerable loss of time in the selection of articles of food.

"Experience, I am sorry to say, is often a good deal a matter of fancy. If one compares the dietary recommended by different physicians for a given condition he will find surprising differences. Part may be matters of judgment and experience, but a good deal is the result of fancy. Dry toast is a positive poison to some persons, while to others it is an enjoyable and harmless food. Experience carries much further, but it is very difficult to get at the sum of the experiences of different persons. Some facts are, however, generally acknowledged—for example: that liquid foods are alone allowable in fever; that carbohydrates are unsuitable in diabetes and proteids in gout. Not many diseases have their diet so definitely specialized as fever, gout, and diabetes. But in the matter of gout there is a wide difference of opinion by authorities. The French school, and it is followed by many in this country, forbids very positively the carbohydrates in the treatment of gout. Chemically, these are not contraindicated in gout, if uric acid is the *fons et origo mali* of this disease, since there is no nitrogen in the carbohydrates. I do not forbid sugars *per se*. If by fermentation they produce acids, this is a reason for not using them, since the acids thus generated go to neutralize the alkalies which otherwise keep the uric acid in solution. If sugars and vegetable acids act in the same way, they are also contraindicated.

"In illustration of idiosyncrasy, of two cases of gout, one could drink a pint of lemonade with perfect comfort, and another could not touch lemonade without bringing on an attack. The reverse was true of strawberries. This goes to show what is proven in many different ways in contact with disease, that the individual as much as the disease requires to be studied and treated.—*Dietetic and Hygienic Gazette.*

CONTROL OF DIPHTHERIA.

BY W. K. JAQUES, M.D., CHICAGO.

The knowledge which careful investigation has given the medical world has placed within our hands the means of controlling diphtheria—the most fatal disease of childhood—as it has never been controlled before. Just in proportion as this knowledge is made available when needed, will be the success with which the disease may be held in check. In the past, diphtheria has been in the hands of the family physician, the health official taking little or no part in the treatment, except to warn the public by a placard and insist upon isolation. But our present knowledge of the disease demands a greater participation than heretofore by municipal as well as State officials.

Diphtheria is influenced by every factor that affects the physiologic resistance of the human system. History shows that in every large city, in periods varying from seven to ten years, the disease becomes epidemic, probably due to racial and climatic conditions which cause an increased predisposition, as well as favorable conditions for the virulence and spread of germs. During the summer, or the seasons of least susceptibility, the Klebs-Lœffler bacilli are preserved in dark tenement and basement houses, and other favorable places where sunlight cannot destroy them. During seasons of increased predisposition, they spread from one susceptible individual to another. The Klebs-Lœffler bacilli, inoculated on the mucous membrane, grow with a rapidity proportionate to the susceptibility of the individual. The bacilli, in their growth, produce a ptomain, very destructive in its nature, which causes necrosis at the point of invasion, and a general cell-destruction, corresponding to the degree of virulence and cell-resistance.

The symptoms caused by the invasion of the Klebs-Lœffler bacillus are simulated by several other germs, with which it is often associated. When this is the case, the symptoms of the Klebs-Lœffler bacillus may be so obscured by those of the associate germs that its presence cannot be discovered in the early stages except by the microscope. Mucus taken from the site of the invasion contains the germs exciting the inflammation, and they may be clearly identified through the microscope, after a few hours' cultivation, before the production of membrane or other clinical evidence of diphtheria.

Antitoxin is a specific in the early stages of the invasion of the Klebs-Lœffler bacilli, and the mortality increases in direct ratio as the diagnosis and administration of the serum are delayed. Then the first necessity in the control of diphtheria is an early bacteriologic diagnosis; the next, the proper use of antitoxin. Here begins the responsibility of the family physician, and upon his conduct rests the subsequent results. He must first appreciate the danger that lurks in a simple sore throat, and realize that bacteriologic as well as clinical evidence is necessary for an accurate diagnosis. Laboratory work of any extended nature is seldom possible for the general practitioner, because of the necessary time and equipment; hence this work should be supplied by those whose interests are most involved, and who are best prepared to do it. These are the officials of the health department, who are the guardians of the public welfare, and whose duty it is to help suppress anything which threatens the health of the body politic. Any contagious disease which manifests itself in the form of an epidemic is directly within the jurisdiction of municipal health officers, not for individual treatment, unless it is clearly beyond the scope of the physician, but for the provision of such measures as will enable the physician to best control the disease.

A remedy is only a remedy when applied to the particular disease it is adapted to cure. Antitoxin is a by-product of the Klebs-Lœffler bacilli, and is just what its name implies—a remedy against or opposed to the toxin produced by these bacilli. Having been made possible by the revelations of the microscope, it should be applied as scientifically as it was discovered. Following the first reluctance to use antitoxin at all

has come the tendency among some physicians to administer it indiscriminately in any and all cases of sore throat. This is not as serious in its consequences as the total omission of the remedy, for one is likely, by chance, to cure a case of real diphtheria; but it is unscientific and renders unreliable the record of its results. Given a remedy and its specific action, based upon a certain condition, and the means of discovering that condition, and the physician of to-day is master of a disease which for centuries has been an unconquered foe of the race.

It may be questioned as to whether or not municipal or State authorities have the right to demand certain treatment of a disease from physicians whom they have licensed to practice, after having been convinced of their ability to do so. But the majority of physicians now practising received their medical training before the existence of much of the knowledge upon which our present experience is based. It is not pleasant to admit that some doctors who boast an experience of a quarter of a century, or even a decade, are prone to prefer this experience to "new-fangled" theories. Nothing makes a physician feel so helpless as a consultation with an old physician, who declines antitoxin with the remark that he has used iron and sulphur, and similar remedies, for thirty years, and never lost but one or two cases of diphtheria. There is no argument which will convince such a man that some of the cases may not have been diphtheria. He knows it when he sees it, though he sees it but seldom; and the expert who treats it all the time dares make no such assertion without the confirmation of his microscope. It is this class of physicians who keep up the death-rate in diphtheria, and who make it absolutely necessary that health officers shall demand the use of such methods as have been demonstrated as most efficient in protecting the public and the individual. If the foregoing were not sufficient reason for action on the part of health authorities, there would still remain the fact that diphtheria is a disease of the poor people, and as such requires protection and aid.

In the individual who is protected against diphtheria, there is a constant amount of antitoxin present. It is one of the products of cell-life, under favorable physiologic environment, and is carried to all parts of the body. When the mucous membrane becomes congested, the functional activity of the cells is arrested and their resistance to the invasion of hostile germs is weakened. The toxin of the invaders acts as a stimulant to the other cells throughout the body, causing an increase in the production of antitoxin. This is carried to the site of the invasion by blood and so fortifies the surrounding tissues that the invasion is stopped. With this explanation one can understand how the Klebs-Lœffler bacilli may be present in the mucus of the mouth for weeks without producing an invasion; but when vital resistance is lowered by cold, hunger, loss of sleep, anxiety, menstrual period, or other debilitating factors, the disease manifests itself.

A high degree of physiologic resistance is the surest safeguard against all disease. This condition is only possible with hygienic surroundings; hence it is obviously the first step towards the suppression of disease, particularly of a contagious nature, to demand of the filthy man that he

shall keep himself and his surroundings clean. It is a very fine line which separates the duties of the health official from those of the family physician, and the highest degree of success can only be attained by their harmonious co-operation. Health officials are dependent upon doctors for much statistic information involving time and labor, for which they are not compensated. Not only in return for this, but as a means of guarding the welfare of the public, the authorities should provide such facilities for physicians as will render the treatment of contagious diseases as efficacious as possible.

The expense of a laboratory to a community is small compared with its benefits, and when properly equipped, with an experienced bacteriologist, will prove a very important factor in the hygienic government of a city or town. The culture medium should be properly prepared or the examinations will be confusing and misleading. The change in the forms of the Klebs-Lœffler bacillus, and the modifications in cultural developments, owing to associate germs, make the identification of the bacillus sometimes difficult. Diphtheria work in all its phases is greatly facilitated by experience, and all the cultures of a community are no more than sufficient to give a bacteriologist a knowledge of the varying forms.

From a legal standpoint, it may be a serious matter to placard a house or place of business, and it should not be done unless the department fortifies itself with evidence of the contagious nature of the disease. This it can best do by making its own cultures, or by doing the work for physicians.

Antitoxin is a product which should be subjected as little as possible to the vicissitudes of commercial exchange. It deteriorates with age, and the irregular demand often leaves it on the druggist's shelf for months. When it is needed, it is usually in an emergency, when the life of a patient is depending upon the quality of the first dose of serum. Owing to the large profits accruing from the sale of antitoxin, irresponsible firms have been tempted to place an unreliable grade of the serum on the market. Foreign governments have taken measures to protect their cities by restricting the manufacture of the article. If State officials are not able to do this, they are at least in a position to investigate and satisfy themselves of the best grades on the market to be supplied. No greater service can health officials perform than to arrange for a fresh supply of a reliable grade of antitoxin, throwing careful restrictions about the distribution of that intended for purposes of charity. Delayed treatment means increased infection, and the control of the disease in the tenement districts means fewer funerals on the boulevards.

These facts furnish the basis for the plans now used in cities to reduce the death-rate in diphtheria. The predisposition to this disease is as great in Chicago as in any city of its size in the world. Its geographical situation makes it the commercial centre of the United States; while the immense system of railways radiating from and through it, make it a rendezvous for all classes of foreigners, as well as an incalculable means for the distribution of contagion. Added to this are its crowded districts and its raw lake winds, which have together made the city a shining mark for diphtheria. By furnishing convenient culture media microscopic

examinations, the best obtainable grade of antitoxin, and the services of expert physicians as inspectors and operators, Chicago now points with pride to a death-rate which has been reduced from 37.5 to 6.7 per cent.

In the rural districts, where these means of controlling diphtheria do not exist, the mortality is almost as high as ever. If such a reduction can be accomplished in a large city, under circumstances most favorable to the existence of diphtheria, a similar plan ought to be even more effective in country towns where hygienic conditions are most favorable to health. The methods used in Chicago can be applied and carried out, with some modifications, by the health department of any city or town. Where such an office does not exist in country places, the work can be carried on by direction of State officials with very little expense. The equipment for diphtheria work would represent but a small outlay compared to the advantages to be reaped from its protection. There is no disease of childhood which finds an unprepared country doctor quite as helpless as the malignant form of diphtheria. Without bacteriologic facilities, it usually takes several deaths to convince a physician what he has to deal with and provide for. That part of the control of diphtheria to be performed by health officials is largely by direction of effort. Previous preparation is very important, and should occupy the summer months, when a physician's work is light, and he can devote time to the acquirement of knowledge concerning the morphology of the Klebs-Lœffler bacillus, and the best method of doing the work.

The fear of cholera or an epidemic of yellow fever has caused State officials to spend thousands of dollars in questionable methods for the protection of the people; but a disease which is absolutely preventable has received little or no attention from these officials. The best authorities on the subject believe that if children were given the highest scientific protection there need not be a single death from Klebs-Lœffler diphtheria. We have the knowledge and the remedy; all we lack are the individuals in official life to apply them for the protection of the public. —*Jour. Am. Med. Association.*

TIME AND MANNER OF THE ADMINISTRATION OF DRUGS.

Search for the causation of disease has so engrossed the attention of the medical profession that but little time is devoted to the proper manner of the restoration of the equilibrium to the normal. Surely to properly diagnose a case is not all of a physician's duty, for then the patient may die. What the patient desires most is to get well as quickly as possible. Those who practice irregular medicine have not been slow in learning this prejudice of the people, and have turned it into a financial gain to themselves.

Good-tasting medicine is a great catchpenny to homeopaths, for if it does no good it pleases the parents and thereby diverts money from the hands of physicians to the pockets of the irregulars. This practice is common and is most appreciated by those physicians who live in cities. How often do we hear it said that the reason so-and-so were "converted" was because they did not like to take the bad-tasting medicine of the

"old-school" doctors. Those who carry out this line of thought logically and naturally think: If the weak or good-tasting medicine of the homeopath cures as many people as the other, then why take any medicine at all? And from these premises it would not be far to believe the tenets of Christian Scientists, because, forsooth, it is a matter of faith anyway.

An art that is yet to be learned is the time for the administration of drugs. What good will it do a patient to give a highly nutritive diet, if asafetida, cod-liver oil, guaiac or quinin is to be given immediately before meals? What good will a saline purgative do when given immediately after a meal? If the patient is awakened during the night to take nourishment and medicine at the same time, what good will he derive from either? Our sense of taste and smell must at least serve some purpose, for our appetite craves for that which is good. In disease, the appetite is held in abeyance, perverted and most uncertain. Drugs do not furnish nourishment; they simply act upon the force generated by the nourishment taken. Then why destroy this force? There then must be a proper time and there must be a proper manner of giving medicine.

Elegance in pharmacy should be encouraged. The art of prescription-writing should be learned. In this respect we should copy after the French, who are noted for their elegance in pharmacy. Gelatin capsules serve a most valuable purpose to the regular physician; for unpalatable drugs may thus be taken without being tasted. Compressed triturates should be received with great joy, for they demonstrate the energy and enterprise of the "old school" doctors. All drugs, however, cannot be put in tablet form. Some drugs are volatile and others hygroscopic; therefore solutions must always have a place. The art of disguising the taste of unpalatable drugs so that the patient can or *will* take them is one not easily acquired by the profession, because it is largely governed by manufacturers of patent medicines. With the child, a solution of magnesium sulphate or an emulsion of castor oil causes disobedience, and frequently the mother will not give them. Some children will vomit when given too sweet drugs, while the adult loses his appetite. Half an ounce of myrrh to a four-ounce mixture is usually sufficient.

Alcoholic extracts, such as cannabis indica, cubebs, or eucalyptus, precipitate on the addition of water, and therefore should be given in capsules. Solutions of quinin, bromids and prescriptions containing fluid extracts may be rendered palatable by the addition of a syrup containing aromatics, such as the elixir curacoa of the National Formulary. Oleoresins are unsavory and frequently render a patient most rebellious. The taste of copaiba, cubebs and sandalwood remains in the mouth for hours There is a little art required in dispensing these substances in gelatin capsules, as follows: Place the oil in the capsule by means of a pipette and seal with an alcoholic-ethereal solution of balsam of tolu. Rochelle or Epsom salts are very soluble and should be dissolved in a small quantity of water and taken, and subsequently a large amount of water given if desired. Guaiac has come down to us from former times as a valuable remedy in rheumatism, gout, lithemia, etc., but there are few text-books which tell of its proper administration. Here again the manufacturers of patent medicines pervert legitimate pharmacy from its proper channels,

because it is easier to give something else than to combine the guaiac in lozenge form by means of the confection of rose and flavored with oil of lemon and cloves. In cod-liver oil we have one of the best known tonics, yet how often do we find that it cannot be borne by the patient. To disguise its taste and render it palatable frequently baffles the physician, so that if one of the proprietary emulsions is not used the remedy may be abandoned. Cod-liver oil that has become rancid can never be disguised, and will in nearly every case disturb the stomach, so its character should always be under the surveillance of the attending physician. In most cases an emulsion that is borne well can be prepared by taking the yolks of three eggs, triturating in a mortar for *at least* fifteen minutes, and then adding the oil teaspoonful by teaspoonful until the whole has been incorporated. The yolks of three eggs will suffice for a quart of finished emulsion. Probably the best ingredient to disguise its taste is bitter almond water, usually an ounce being required for a quart of emulsion.

While these few remedies are not all that might receive attention, it is hoped that a few hints may be thrown out which will benefit the general practitioner and keep legitimate pharmacy within proper bounds.—*Jour. Am. Med. Assoc.*

EFFECT OF CHLOROFORM AND ETHER NARCOSIS ON THE LIVER.—Bandler of Prague, performed a herniotomy on a hitherto strong, healthy man, who was, however, a hard drinker, using chloroform as an anæsthetic. A few days afterward icterus developed and the patient died with cholemic symptoms. As leucin and tyrosin were found in the urine, intra vitam, the diagnosis of acute yellow atrophy of the liver had been made, and it was confirmed by the necropsy. Bandler has since been studying the literature on the subject and experimenting on animals to determine the exact effect of chloroform narcosis on the parenchymatous organs. He states that every case of chloroform narcosis showed degeneration of the liver cells afterward, while this degeneration was absent or very slight after ether narcosis. He therefore urges the importance of avoiding the use of chloroform in cases where there is reason to suspect that the liver is not perfectly normal, and using ether instead. —*Medical Sentinel.*

LOCAL ANESTHETIC.

℞ Orthoform, pulv..... 2.0-4.0
Lanolin 15.0
Vaselin..... 5.0

M. ft. ungt. S.—For external use in rhagades, ulcerations, burns of all degrees.—(*Munch. Med. Woch.*)

FISSURE OF THE TONGUE.

℞ Acid carbol..... 1.5
Tinct. iod..... 5.0
Glycerine 15.0

M. D. S.—For local application with a camel's hair brush.—(*Monatsh f. Dermatol.*)

SURGERY.

IN CHARGE OF

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CYSTITIS.

VARIETIES.—Melchior contends that there seems very little doubt that we have to recognize the existence of two distinct types of cystitis—one associated with acid and the other with alkaline urine. In the latter some of the organisms capable of decomposing urea and liberating ammonia are present—*e.g.*, the diplococcus ureæ liquefaciens, the proteus Hauser, the bacillus pyocyaneus, etc., with or without the bacillus coli communis; in the acid forms of cystitis, the latter organism is alone present. The former type has long been recognized, and its characters noted; but practitioners are not so frequently on the lookout for cystitis with acid urine.

SYMPTOMS.—Guitéras says the symptoms—pains, pus in the urine, and frequently of urination—may come from other causes, singly or combined. If singly, the disease is not cystitis; if combined, they may result from two or more diseases. In the beginning of acute cystitis we often have fever, depression, nausea, loss of appetite, constipation, etc. Hæmaturia is also often present. In chronic cystitis the urine is generally light in color, alkaline, of a lowered specific gravity, containing a slight amount of albumin, perhaps some blood, and pus in abundance. When allowed to settle, pus forms a more or less dense deposit on the bottom of the glass, above which there is a cloud of muco-pus. Bladder epithelium is found, especially in the forms where ulceration is present. In all cases certain microbes of suppuration are present.

Hutinel remarks that cystitis from colon bacilli in children usually begins with irregular fever, and the local symptoms soon become marked; frequently painful micturition, often followed by a few drops of blood; the urine contains albumin, an abundant deposit of muco-pus, and microscopically epithelial and pus cells, and the bacillus coli communis in large numbers.

Wollstein cites cases of cystitis without symptoms. The urine was pale, had a specific gravity of 1018, and contained much albumin and some leucocytes, with epithelial and granular casts. There was no uræmia. At the autopsy was found chronic cystitis, especially around the trigone.

DIAGNOSIS.—Guépin and Grandcourt express the view that there is a series of diseases with bladder manifestations in which no pathological condition exists in the bladder, usually diagnosed as cystitis. The bladder symptoms in such are the result of nervous reflexes, principally from an affected posterior urethra, but they may also come from the anterior urethra, from the ureter, and even from the kidney. The diagnosis is often extremely difficult, and depends finally on careful local examination. In cases of false cystitis the symptoms are always aggravated by intravesical medication.

PROPHYLAXIS.—Noble emphasizes the fact that all who have devoted special attention to characterization as a cause of cystitis know that there is no better method of causing cystitis than the attempt to perform this without full antiseptic precautions. The catheter should never be passed with the exposure and cleansing of the meatus urinarius. The cleansing should be done with bichloride solution 1 to 1000, and a sterilized catheter passed under the guidance of the eye. Because of the facility with which glass catheters can be sterilized by boiling, these are to be preferred. If a soft rubber catheter is used, this should be boiled five minutes immediately before being used. A glass catheter can be passed without any lubricating material, if it is dipped in the bichloride solution and introduced wet. If a lubricant is used, the best is boro-glyceride solution.

ETIOLOGY.—Shrady queries how the bacillus coli communis gets into the bladder, and whether it always causes cystitis when there. Interesting observations on urine in disease reveal its presence where no cystitis exists. Escherich explains the greater frequency of coli-cystitis in girls upon purely anatomical grounds, assuming that infection may come from without, and by means of direct contact of excrementitious products with the mucous surfaces of the vagina and urethra; others think there may be direct migration of bacilli through the walls of the intestine into the bladder. Denys thinks this possible only when there is a lesion and hyperæmia of the intestine, but Czerny, Escherich, and Trumpp have found the bacillus coli communis in the blood in cases of enteritis. Work on the cadaver has also demonstrated its presence in various organs of the body. A general coli-bacillus poisoning is always possible, for the virulence of this particular micro-organism, under favoring conditions, has not been exaggerated.

Hutinal observed five cases of cystitis, due to the colon bacillus, in girls between two and ten years of age, who had for a long time suffered from mild mucoid vulvo-vaginitis, and recently suffered from a more or less severe intestinal inflammation. The characteristic symptoms were mucous discharge from vulva, diarrhœa, or tenesmus alvi, painful bladder tenesmus, urine small in amount, containing pus, albumin, colon bacilli in pure culture, irregular remittent fever of short duration. It was not the vulvo-vaginitis but the enteritis which played the principal role in exciting the cystitis. The bacillus coli communis may also invade the bladder, during an enteritis follicularis, and grow there without setting up a cystitis. Trumpp has reported eight such cases of bacteriuria in girls and five in boys.

Rovsing in classifying the different forms of cystitis, indicates his preference for the following:

1. Catarrhal or non-suppurative cystitis, caused by organisms which are devoid of pyogenic properties, and do not attack the mucous membrane of the bladder directly, but which decompose the urine.

2. Suppurative cystitis, of which there are two main groups: (1) an ammoniacal form, in which pyogenic organisms are concerned, capable of decomposing the urine; and (2) an acid form, for the most part due to the tubercle bacillus.

Ammoniacal group includes cases in which the colon bacillus co-exists with other microbes which decompose the urine, and cases in which the latter are alone present. Ammoniacal cystitis is usually the result of the introduction of instruments by the urethra. The acid form of suppurative cystitis is much less common than the alkaline; they are rarely the sequel of the passage of instruments. The microbes concerned are the tubercle bacillus, typhoid bacillus, the gonococcus, the bacterium coli, the streptococcus pyogenes. They gain access to the bladder from the posterior urthera, or by the ureter from the kidney.

Walker has frequently observed cases of cystitis after frequent catheterism in women. It seemed that the cause of the cystitis was injuries produced in passing the catheter, rather than the use of a dirty instrument, because in all of those cases the catheters were sterilized and kept with great care in an antiseptic solution and used principally by the nurse. In spite of all the care exercised as to asepsis, etc., he has seen cases of cystitis develop. It seem to him, therefore, that it was on account of traumatism rather than anything else, for in these cases not only had the cleanliness of the catheters been looked after, but the meatus had been carefully cleansed before their introduction.

Walls relates two cases of exfoliating cystisis. Both originated as a consequence of retroversion of the gravid uterus. The first patient came under treatment when four months pregnant. The second presented herself after abortion had taken place.

TREATMENT.—From an experience of 116 cases, Guyon emphasizes the immense importance of general therapeutics which applied to all forms of cystitis. There is not the danger of irritating the bladder in tuberculous cystitis that there is in other forms, hence the diet should be abundant and extremely nourishing. Creasote ranks first in the medicines. Local treatment must be very cautiously applied, as the bladder is exceedingly sensitive. But the local treatment is extremely important and should be commenced from the first, confining it to very weak solutions. He found boric acid, etc., injurious in any form, and restricts himself to sublimate and guaiacol. The sublimate is beneficial even in very weak solutions and in merely suspected cases. Four out of thirty-three patients treated with it were completely cured, five much improved, and eight moderately. He begins with a 1-to-5000 solution, raising this to 1-to-3000, and reducing the strength at the slightest evidence of irritation. Thirty to forty drops are enough; fifty the maximum. The general treatment occupies months.

Elliott states that urotropin has given him unqualified satisfaction in cystitis. It is non-toxic and non-irritating and is readily soluble in water. It possesses decided diuretic properties and under its influence uric acid and

sedimentary urates previously present no longer appear. A single dose of 7½ grains exerts an influence lasting over thirteen hours, while after a dose of 15 grains its effects last for twenty-seven hours. Urotropin increases the ascidity of the urine. No ill effects upon the kidneys have been observed. The dose ranges from 15 to 90 grains in the 24 hours, it seldom being necessary to employ a larger daily amount than 20 grains. For antiseptic purposes he found its exhibition in 5-grain capsules four times a day to be most satisfactory. When taken in this form the patient is always advised to drink a full glass of water after each capsule.

Nicolaier says, in daily amounts not exceeding fifteen grains, urotropin is well borne for a long time, and no disagreeable symptoms arise from its use.

Under the influence of the drug there very rapidly occurs a marked change in the composition of the urine in cases of cystitis with ammoniacal decomposition. First the ammoniacal smell diminishes in intensity and soon entirely disappears; then the reaction of the urine becomes acid again. The urine becomes clearer, the triple-phosphate and urate-of-ammonium crystals disappear, and the serious troubles so frequently caused by the abnormal constitution of the urine cease. The amount of pus corpuscles also diminishes, and may entirely disappear.

Urotropin does not act by killing the micro-organisms and spores that cause the ammoniacal fermentation, but merely prevents their development.

In acute cystitis a teaspoonful of the following mixture in water given every three hours is valuable:—

℞ Fluid extract buchu, 1 ounce.
Citrate of potassium, 3 drachms.
Sweet spirit of nitre, 4 drachms.
Syrup of lemon, to make 3 ounces.

Banzet declares every patient must be fully nourished. In prescribing internal remedies, due regard must be paid to their effect upon the appetite and digestive functions. Creasote must be given in very small doses, and over a long period. Should definite improvement not result from general treatment, or should the symptoms be such as to forbid delay, recourse must be had to local applications. The drug which yields the best results is corrosive sublimate, in aqueous solution, beginning with a dilution of 1 in 10,000, and gradually increasing the strength to 1 in 5,000, this to be instilled in small quantity every day or every second day. Guaiacol, although very soothing to the sensitive mucous membrane, is distinctly inferior to sublimate.

Harovitz counsels for the treatment in gonorrhœal cystitis, rest in bed, avoidance of all local irritations, administration of morphine, codeine rectal suppositories, or of extract of hyoscyamus, use of local warm baths, forbidding of spices, alcohol and carbonated waters, and the giving of laxatives. Priapism can be avoided by the bromides, with camphor of cannabis Indica.

For the cystitis itself, salol, in three doses of 15 grains each, sodium salicylate or sodium benzoate is useful. If the digestion is excellent, oil of santal, cubeb, kava-kava, balsam of copaiva, balsam of Peru, and

oil of turpentine may be employed. Of importance is the use of infusions, as of uva ursi, quite likely on account of their diluting the urine.

Colin highly recommends the following (Picot's) formula :—

℞ Guaiacol, 5 parts.
Iodoform, 1 part.
Sterilized olive-oil, 100 parts.

M. From ten to twenty drops are injected into the bladder once or twice a day.

Bloom observes that, as far as results go, the technique of vesical irrigation is most important. The apparatus consists of a soft rubber catheter joined to a piece of rubber tubing by a short piece of glass tube. A small glass funnel is connected with the other end of the rubber tube. Sterilization is most important before using it and immediately afterwards. After carefully cleansing the meatus urinarius as well as its immediate surroundings, the catheter, well lubricated with sterilized vaselin, is introduced, the urine drawn off while the instrument is still in place, and the tubing filled with the column of urine, thus preventing the entrance of air; the funnel is filled with the irrigating solution and gradually raised, distending the bladder slowly. The quantity used will depend upon the vesical irritability. The maximum quantity should not exceed five ounces. The funnel is then lowered and the bladder evacuated in the same careful manner.

This procedure is repeated till the washings come away perfectly clear and clean. The temperature of the solution should be about 100° or 105° F. It may be used once a day at first, or at most twice a day, and after a few days the frequency should be lessened.

Escat states that when cystitis proves rebellious to instillations, injections, or washings, curettage through the urethra is indicated. This should not be employed when there is kidney disease, or when the inflammation has penetrated deeply into the bladder-walls. If the inflammation has extended beyond the trigonum, suprapubic cystotomy, followed by curettage, is indicated.

Garceau states that, in general, the curable affections are those which are superficial in character, while those resisting treatment are the cases of long-standing in which the inflammation has involved the interstitial tissue and muscles; in the latter, local treatment is often of little avail. The only treatment thus far which gives relief and sometimes cures, is cystotommy; but the disagreeable features of this operation are so marked that one hesitates before recommending it. In the superficial forms of inflammation, by the cystoscope, the lesions can be treated locally and the applications made directly and exclusively to the diseased areas.

With a No. 8 (millimetre) cystoscope and a good light the female bladder may be inspected with ease and satisfaction. With this small-sized cystoscope previous dilation of the urethra is quite unnecessary in the great majority of women. The examination, in the knee-chest posture, may be made practically painless if one or two crystals of pure cocaine are inserted in the meatus urinarius and left there a few moments before the cystoscope is introduced. After the first examination it will be possi-

ble to dispense with cocainization, for the passage of the instrument causes no more pain than the passage of the female catheter.

THE FREQUENCY, CAUSES, AND PREVENTION OF POSTOPERATIVE VENTRAL HERNIA.*

BY FRANK B. WALKER, PH. B., M. D., DETROIT, MICHIGAN.

In these days of cases by the hundred we should expect to have statistics for any and everything. Surgical operations are being done on a large scale. The results are correspondingly grand. Unfortunately complications and sequels appear in similar proportion. Were this assumption not reasonable it might be suspected from the infrequent reports and the paucity of literature on the subject that ventral herniæ following abdominal operations were of rare occurrence. That they are frequent, however, no one much involved in surgery, and especially abdominal surgery, will deny. Accurate figures on this point are not to be had. The most modest statement I have found is by MARCY, who says: "It is variously estimated by different authors that ventral hernia follows the closure of the abdominal wound after laparotomy in from five to ten per cent. of the sum total of cases." DOCTOR J. T. JOHNSON has affirmed that ventral hernia "actually happens in about ten per cent. of all abdominal operations." GREIG SMITH says: "That it occurs in twenty per cent. of all cases operated upon five years and upward, I firmly believe to be a fact; but we have no figures to prove it." Not to rely solely upon conjectures, some of which are even less restrained, we have the significant statement by DOCTOR BULL that "From March, 1891, to December, 1895, two hundred cases of ventral hernia following abdominal operations and injuries, were observed at the Hospital for Ruptured and Crippled."

Their importance, moreover, is not measured solely by their frequency. They are seldom of little annoyance. Occasionally they are by far more troublesome than the original affection. For these reasons it is assumed that no surgeon should presume to open the abdominal cavity who does not understand and apply the principles by which postoperative ventral hernia may be prevented.

The causes of this variety of hernia include those of the pelvic form. In each may be manifest the influences of heredity, age, occupation, elongation of the mesentery, parturition, obesity, as well as the more marked effects of dysuria, constipation, cough, and strain. The only essential difference is the localized change in the abdominal wall in the region of the cicatrix, on account of which the other causative factors become more effectively operative. The factorage of the scar tissue is explained by reverting to the physiological requirements of these structures. Owing to the muscular and aponeurotic framework on its forward and lateral aspects the abdomen is always full, and its walls subjected to equable pressure, varying according to their contractility, the abdominal contents and the position of the body. The several structures so recross

*Read befor the MICHIGAN STATE MEDICAL SOCIETY at the Detroit meeting.

and reenforce each other in a kind of net work that under normal conditions hernial protrusions are impossible. Hernia never takes place through intact muscular tissue. It is admitted that it may take place through fascia. The uninjured linea alba and linea semilunaris, however, possess enormous tensile power and, unless congenitally defective, are able to withstand ordinary strain. Despite the authority of SIR SPENCER WELLS and the inference from DOCTOR MARCY, we are not inclined to attach to the peritoneum much, if any, responsibility for the occurrence of hernia. The peritoneum and skin are both distensible and easily remain distended during the application of weight or pressure. The physiological functions of these tissues appear to be less those of support than of a peculiar protection to adjacent structures. Having thus eliminated all other sources we assume that the responsibility for the occurrence of this form of hernia rests with the cicatrix.

The opinion is more or less prevalent that scar tissue is stronger and more unyielding than normal muscular and tendinous structures. The truth is that scar tissues from whatever source always stretch. From this tendency even the inch and a half incision cannot escape. The cicatrix becomes broader and thinner depending upon its position relative to adjacent structures and the severity of the strain brought upon it. For instance, the scar formed between the ends of a divided rectus muscle, no matter how accurately coapted, is prone to gape and will stretch much more than one formed between fibers separated longitudinally. The broader and shallower the original scar the greater the change that may be expected to finally result.

It has been said that the use of a drain aids in producing a deep scar. It is generally admitted, however, that ventral herniæ occur more frequently in those who have been drained. The use of a drain separates to that extent the edges of the wound so that a broad rather than narrow scar is formed. Stitch abscesses also, whether due to sepsis or pressure necrosis, tend to produce the same result. Lastly, the atrophy of a divided muscle further increases the defect.

Having thus defined the source of this variety of ventral hernia and the change in the scar tissue that inevitably ensues, the surgical indications unmistakably point to some modifications in the methods of incisions and wound closures by which the normal arrangement of the parietal structures may be more nearly preserved. It is admitted, of course, that some cases are laws unto themselves. Occasionally the saving of life forbids the deliberate procedures to be suggested. In the majority of instances, however, it would be possible to apply the principles herein involved.

For our present purpose incisions are best considered with reference to their three qualities of position, length, and direction. The position of an incision is naturally governed by the nature of an operation and the exigencies of the case. It would be folly to make an incision in the median line when one in the lateral region would conduce more to the ease, rapidity and safety of the operation. The regions in which the several organs or portions of them are best attacked are pretty well determined and need not be mentioned here. The difficulties incident to sections

near bony margins or in the thicker portions of the abdominal walls have no important bearing in this connection. As the deep epigastric artery is the only vessel of any particular moment, and as this is easily sought out and ligated, the possibility of hemorrhage is no modifying factor in choosing the site for an operation. On account of the atrophic condition of tissues consequent upon nerve section, dissection without division should be the rule.

Other things being equal the shorter the incision the less probability there is of hernia. It must not be forgotten, however, that even short incisions inevitably leave behind a permanent and irremediable weakness.

Of far greater importance than the length of an incision, provided the extent of it does not materially influence the mortality, is its direction. As has been already suggested, transverse division of either muscular or aponeurotic structures will be followed sooner or later by a material stretching of the scar, and this separation will be increased by tissue atrophy. Oblique incisions will be followed by the same result in proportion to the tissues divided. Incisions made parallel with the direction of the fibres that is separation without division, will, if coaptation be accurate, leave the tissues practically intact. This applies, however, rather to muscular than to fascial or aponeurotic tissues. If a layer of intact muscular tissue lies above, below or alongside other separated or divided tissue, the latter is thereby much strengthened and the liability of hernia is much lessened. This explanation is offered for the less frequent occurrence of hernia after longitudinal division through the linea alba and linea semilunaris. Opening of the sheath of the rectus is on this account productive of strength as muscular tissues are thereby brought into the wound.

As the cicatrix naturally tends to become broader and thinner the attempt should be made to render it as narrow and deep as is consistent. The first requirement is met by accurate coaption of like structurcs. The second is effected by bringing a consistently large bulk of tissues within the sutures. Of these the muscular should form the larger part The results obtained by the use of separate lines of buried sutures do not belie the safety of this method. Neither can we gainsay the utility of the mass suture method, when properly applied. By proper is here meant the inclusion of more muscular tissue than skin within the sutures. This may be accomplished by gently retracting the skin before inserting the needle. There can be no question but that this is a simpler and more speedy method of closing the incision than by the use of two or more lines of buried sutures. The similarity of scar tissue, whether formed from muscle or fascia, lessens the necessity of overnice juxtaposition of corresponding layers. Furthermore, as GREIG SMITH has pointed out, the suture of the separate layers may be objected to for the reason that it "devascularizes the lines of union and narrows them. Such a suture leaves a series of gaps to be filled with clot between each layer at the line of junction; there is not one flush meeting of the whole of the rawed surfaces as in the mass sutures. Also the cicatricial tissue dipping into these hollows is longer, therefore more easily stretches; while the

bulk of it in depth not being so great is not so strong." However, the particular method used is not of such essential importance as the method of incision. So long as the divided tissues are closely approximated, sepsis avoided, and the tissues firmly held in juxtaposition until a mature cicatrix has had time to form, which ordinarily requires three or four weeks, other pains may be regarded as a refinement.

To summarize and apply the principal points: Postoperative ventral herniæ are assumed to result in at least one in every five cases of laparotomy as at present performed. They are of sufficient importance to deserve prevention. The principal cause is the stretching of the scar tissue following transverse or oblique division of the abdominal muscles. Wherever possible tissues should be separated, not divided. In the median region incisions should always be vertical and penetrate the sheath of the rectus muscle. In the lateral regions separation of each muscular layer without division of the fibers should be practiced in every instance possible. If retraction of all the layers without division be impossible, separation should be effected at least in the most important muscular layer. All incisions should be as short as practicable. The edges of a wound should be accurately, not too tightly, coapted; consequently stitch abscesses and other evidences of sepsis must be avoided, and as far as possible drainage sh.uld be dispensed with.

TREATMENT OF STONE IN THE BLADDER.

BY DR. ED. L. KEYES.

(Ann. of Surg., May, 1898.)

The author's conclusions are as follows:

1. When stone complicates enlarged prostate, if the condition of the latter be such that were the stone absent no operation would be called for, then the whole question is to be solved by deciding whether the obstructive quality of the prostatic enlargement, the size of the bas, the depth of the bas-fond, the irritability of the prostatic urethra, and its resentment of instrumental interference—whether any of these factors be sufficiently accentuated to make litholapaxy impossible, or to make it possible only at the expense of leaving the patient (as to his subjective symptoms) worse than before.

If such conditions do obtain, then the stone should be removed by the knife.

2. In short, the main matter is one of diagnosis by the searcher, the cystoscope, rectal touch, and the tentative testing of the prostatic urethra with instruments.

3. The size or position of the stone is not a factor, except in the case of encysted stone or one too large for the lithotrite to grasp, or in the case of a foreign body. The smallness alone of the stone is relatively an argument against litholapaxy, since the symptoms in such a condition must be ascribed rather to the prostrate than to the foreign body.

4. If lithotomy be performed, the suprapubic route should be selected,

since this opens the door for more perfect work, and allows the surgeon to remove obstructions, such as third lobe, interstitial growths, outstanding horse-collar enlargement, bar, and to lower the vesical end of the urethral floor, thus accomplishing all that could be done by a more extensive prostatectomy without very seriously increasing the operative risk.

5. Finally here, as elsewhere in surgery, the only safe, practical guide is surgical judgment, based upon diagnosis, guided by experience.—*Post-Graduate.*

THE SURGERY OF PANCREATIC ABSCESS.

Sikora (*Gazette des Hopitaux*, July 7th, 1898) observes that the prognosis of suppurative pancreatitis is very serious since of all published cases all have proved fatal excepting Paul's and Thayer's. These happen to be the only cases where there was surgical interference. Senn first advocated that step. He proposed that after a median abdominal incision the parietal peritoneum should be sutured to the cut edge of the skin so as to prevent pus from entering into the muscular layers of the abdominal wall. Then the peritoneum pushed forwards by the abscess is carefully sutured to the abdominal wound. A long incision is needed if the abscess be not very prominent, else it will be difficult to fix its serous covering satisfactorily to the parietes. Not until the suturing has been finished by tying of all the sutures should the abscess be opened and drained. Lumbar drainage is sometimes needed as in cases of pancreatic cyst. Paul emptied over a pint of pus out of a pancreatic abscess. Pieces of disintegrated glandular tissue floated about in the pus, and at the bottom of the cavity the head and tail of the pancreas could be felt. Yet though the entire organ seemed broken up, the patient recovered from the operation and was restored to health. Thayer's case was similar, the patient was a man aged 44, with all the symptoms of suppurative pancreatitis. The abscess was opened on Senn's principle; a thick orange-brown pus, mixed with greasy tissue, came away. The abscess cavity opened into the substance of the pancreas. Within three months the patient was well again.—*British Medical Journal.*

BLENNORRHAGIC ARTHRITIS—TREATMENT.—It is advisable in all acute inflammations of the joints to examine the urethra. In 90 per cent. of the cases urethritis will be found. The cases may be divided into four groups: First, where effusion alone occurs; second, where there is formation of fibrin and thickening of the capsule; third, periarticular plegmon with impairment of the action of the tendons and elasticity of the ligaments; fourth, where ankylosis occurs very early. The puncture of the joints and the injection of a solution of carbolic advised. If there is a periarticular affection, the joint should be opened and washed out.—KONIG (*Sammlung. klin. Vortrage*, No. 170, '96; *Boston Med. and Surg. Jour.*, July 7, 98).

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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THE PATHOLOGICAL ANATOMY OF THE TRAUMATIC NEUROSES.

Lutzenberger, *Annali di Neurologia*, 1897, xv, Fasc. v, 354-371, publishes the results of an experimental investigation upon the effects of traumatic shock on the central nervous system. His experiments were performed on guinea-pigs, which were subjected to various injuries, so as to produce traumatic symptoms in the functions of the brain and cord, and then after a period of observation were killed and the cord and brain examined microscopically, the methods of Nissl, Marchi, Weigert and others being employed. The results are summed up in the following conclusions:

1. The general nutritive disturbances produced by injury to the nervous system appear first in an increase of ganglionic cells in a regressive phase.
2. The circumscribed lesions following trauma of the nervous system have two origins; one is due to confusion and contrecoup, the other by shock transmitted to the cephalo-rachidian fluid.
3. When the microscopic examination reveals no traces of softening, a histological and histochemical (that by coloration and chemical reaction) may show cellular alterations in the parts exposed to contrecoup, and lacerations of the medullary sheaths of the fibres also at a long distance from the direct point of action of the trauma.
4. The alterations of the ganglion cells observed at the point of the traumatism, or in the region corresponding to the contrecoup, are represented by a *special polar* distribution of the chromatic substance, thus far not described in any other disorder.
5. In cases also of trauma on the head, the rapid displacement of the cephalo-rachidian fluid may produce lacerations of the cord. These may so alter the arrangement of the white and gray columns as to simulate a heterotopy.
6. As a result of trauma, we may meet with sclerotic cicatrices in the cord, especially where the lacerating effect was greatest.
7. The capillary apparatus of the central nervous system often responds to trauma with a capillary and venous dilatation; in such case we find abundant cellular changes in the medulla oblongata.

8. When the trauma is followed by cachexia the cellular alterations may be very marked and closely resemble those produced by the grave cerebral disturbances of general paralysis.

NUCLEAR ALTERATIONS OF CORTICAL NERVE CELLS.

Grimaldi, *Ann. di Neurologia*, 1897, xv, Fasc. v, discusses the nuclear alterations of the cortical cells in the insane, a subject that until lately appears to have received less attention than some others. A large part of his paper is taken up with the literature of the subject, which appears to be quite thoroughly reviewed.

His personal observations were made on four cases of general paralysis, and he distinguishes in these two groups: one in which the alterations of the nucleus were the same as those of the rest of the cell, and where it was indistinguishable from the rest of the protoplasm, having lost its contour and special characters; the other, in which with profound protoplasmic change the nucleus was still well marked and distinguishable, and only degenerates in a very advanced stage of the morbid process, and only in some cases displaced to one side or the other. Grimaldi does not hold that these are different degrees of the same morbid condition, but suggests that there is a special type of deleterious influence in the second of these classes that does not directly act on the nucleus, while in the other class the morbid process, whatever it may be, acts equally on it and the protoplasm.

ERETHOPHOBIA.

A. Pitres and E. Regis, Congress of Alienists and Neurologists, Nancy, 1896.—The physiology of blushing was reviewed with more particular reference to its psychologic phenomena, and attention was especially called to the fact that in some cases this particular condition may go even to obsession. Blushing is a quite common condition, usually attended with more or less temporary psychic embarrassment, but on the other hand, in some cases, owing either to its undue frequency or to the intensity of the embarrassment, assumes the role of a morbid phenomenon. With some individuals the *ennui* of having blushed is so paramount that it augments the tendency and the fear of blushing again haunts them so much that in their every act they appear timid and embarrassed; they blush without reasonable provocation, and are in consequence so miserable over their condition that they shun society and become sombre, misanthropic, and in some extreme cases contemplate self-destruction. These cases are far from being exceptional, as the study and inquiry of the authors demonstrated. This psychologic disturbance and apprehension is usually one of only temporary duration, beginning in many cases at about 20 and in the majority ceasing before 30 years of age, but in some it persists indefinitely in the form of a veritable obsession.

The condition is divided into three categories which represent degrees of gradation of the intensity of the psychologic confusion.

Simple Ereuthosis.—To the first degree belong individuals who exhibit an undue facility of blushing and in whom it is excited by the most insignificant triviality, but when it is once over it is ended, as far as any further thought of it is concerned.

Emotional Ereuthosis.—In this class may be included certain young men and women at the formative period who are characterized by not only an excessive disposition for blushing, but also by an exaggerated degree of confusion, which, however, stops short of obsession. Those belonging to this group are persons exhibiting a manifestly neurotic temperament without necessarily presenting evidences of hereditary stigmata.

Ereuthophobia.—This form represents the most advanced degree of this most singular psychologic perturbation. It differs from the two previous groups in that the constant pre-occupation of blushing constitutes a veritable obsession, variable in intensity, but incessant in duration. A number of cases were reported, and from the citations it is seen that all with one exception were young males, markedly neurasthenic, with ancestral stigmata. All are unanimous in stating that the atmospheric variations largely influence the susceptibility to blushing. In the cold, dry weather of winter and in the hot days of summer there is an appreciable amelioration and diminution of the trouble. In some extreme cases where the blushing was particularly marked, capillary pulsation could be detected.

The authors then traced with much elaborate minuteness of detail the order and character of psychological evolution of the emotions of the unfortunate individuals who are subject to this condition. Nine cases were reported belonging to this last type, and it is interesting to note that of these the cultured and more intelligent almost necessarily succumb and become victims to a bitter and subtle pessimism encountered, as was pointed out by Regis, in what he calls his "neurastheniques superieurs."

Treatment has proved ineffectual in these pronounced cases even when suggestion as a therapeutical procedure was carried to its extreme limits the disturbance persisted with the utmost tenacity, with practically little or no amelioration. A. J L.

NEURASTHENIA AND GENERAL PARALYSIS.

E. Regis, Congress of French Alienists and Neurologists, Nancy, 1896. Dr. Regis in his paper first directs attention to the frequent existence of a neurasthenic state in the preparalytic period, as pointed out by Aug. Voisin, and more recently in a special study by G. Ballet. Regarding the differential diagnosis between essential neurasthenia and the preparalytic neurasthenia, the author thinks Gros, of Heidelberg, goes too far in saying that all neurasthenia developing between 30 and 50 years in a man up to that time healthy and not nervous should cause one to suspect the incipiency of a general paralysis.

The difficulty experienced in establishing the diagnosis between general paralysis and neurasthenia is an occurrence of less theoretic than practical importance, as amply illustrated by the symtomatology and history of the cases observed by Dr. Regis. The distinction between what Kraepelin

would significantly call the "asthenic psychosis of convalescence" and paretic dementia is not always based upon lines of as sharp and distinct demarcation as one would be led to believe. The following is illustrative and demonstrative of the point in question: Madame M., 49 years old, with previous good health, non-syphilitic, is in May, 1896, affected with influenza, followed by an attack of measles. At the maximum of the eruption there is a brusque apparition of an infectious delirium, at first nocturnal and finally continuous in character. On the 5th of June, when seen by Dr. Regis for the first time, he found a state of profound asthenia, the patient presenting all the signs of an advanced general paralysis—incoherence and loss of memory, ideas of grandeur, characteristic embarrassment of speech, inequality of pupils, and fibrillar tremor of tongue with trombone movement. There was a uniform tremor of the lips and hands, and an abolition of tendon reflexes; standing and walking were impossible. In the presence of such a clinical picture the author was strongly inclined to the diagnosis of paretic dementia, but the short (10 days) duration of the disease caused him to suspend his diagnosis temporarily. The patient was placed in the hospital for one month and carefully observed; at the end of which time there was practically no improvement. When seen five months later (December), there was absolutely no evidence of the late trouble, with the exception of certain mild hallucinations.

The author in reviewing the work of Morel, Roscioli, Levillain and Krafft-Ebing forcibly brings out the fact that the diagnostic confusion of certain paralytic forms of neurasthenia and general paralysis has been observed and studied by the clinicians whose names are cited.

In the differential diagnosis of neurasthenia and general paralysis in its incipiency, the first question to decide is whether the neurasthenia is of a constitutional or essential type, or whether, on the other hand, it is an accidental neurasthenia of recent origin. In the first case the hypothesis of a general paralysis is highly improbable, but is possible in the second. If the case belongs to the second variety it is important to ascertain its origin—that is, whether it be the result of an auto-intoxication or an infection, especially of syphilitic origin.

The diagnosis can be made in the acute infections by the fact that the paralytiform neurasthenia follows a regressive evolution, whilst the chronic infections may be diagnosticated by the more grave nervous or cerebral symptoms of neurasthenia. In many cases, however, the similarity between general paralysis and neurasthenia is so close that a differential diagnosis is well nigh impossible except in the latter phases of the affections. A. J. L.

SEXUAL ORIGIN OF NEURASTHENIA AND PSYCHONEUROSIS.

Sigmund Freud announces that every case of neurasthenia has some abnormal occurrence or occurrences in the sexual life of the patient at the present time or since puberty. He scouts the idea that mental overwork or excess of household cares can alone induce neurasthenia, although any depressing factor may favor its development, and insists that absorb-

ing occupations, especially intellectual, protect against the evolution of neurasthenic affections. He divides them into: 1. Neurasthenia proper, which he claims can always be traced to excessive masturbation, unnatural sexual intercourse, etc. 2. "Anxiety neurasthenia," distinguished by dread, restlessness, agoraphobia, vertigo in walking, sleeplessness, etc.; this form he states can also invariably be traced to sexual influences in the nature of unsatisfied impulses, coitus interruptus, abstinence with inflamed desires, etc. He protests against the prevailing hypocrisy in regard to sexual matters, and urges the physician to assume an abnormal sexual life as his guiding star in the etiology of neurasthenia, as this alone will help him to treat it rationally, after winning his patient's confidence. In cases absolutely impossible to trace to any abnormal sexual occurrences, he decides that the affection is not neurasthenia, and by eliminating this conception, he has discovered unsuspected local affections, in one instance a latent suppuration in one of the accessory nasal cavities, which had only produced neurasthenic symptoms, entirely cured by an operation.—*The Medical Times.*

DIET TREATMENT OF HEADACHE, EPILEPSY AND MENTAL DEPRESSION.

Alexander Haig, M.A., M.D., Oxon, F.R.C.P., in *Brain*, summer number, says: "Those headaches associated with an excess of uric acid in the urine are treated by excluding from the diet all fishes, meat, eggs, tea, coffee and cocoa, and giving milk, cheese, pulses, cereal foods and fruit. From the change of diet the nutrition of the patient is lowered, so that the stored reserves of uric acid flood the blood, and, besides, many vegetable foods introduce more alkali and less acid into the body than do the animal foods interdicted, and thus increase the alkalinity of the blood, and flood it with uric acid. For these reasons an increase of headache occurs in the beginning of the treatment. To tide the patient over the period of excessive headache, a mixture of bromide of ammonium and salicylate of ammonium is given. However, this plan of diet is to be preserved in, for the increase of headache, in the beginning of the treatment, when the first rush of uric acid occurs, is to be regarded rather as a favorable than an unfavorable sign.

"In mental depression the same diet is used, and, to conserve the patient's strength and energy, he is put to bed with most happy results.

"In the treatment of epilepsy success was not so well marked; but a thorough trial of treatment is insisted upon before the plan is abandoned. Here, too, an increase in the number of convulsions may occur in the commencement, which, however, is not to be regarded as unfavorable."

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

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TOXINES AND ANTITOXINES.

The *Proceedings of the Royal Society*, for July 29, 1898, contain a remarkable communication to the society by C. J. Martin, M.B., D.Sc. Lond., acting professor of physiology, and Thomas Cherry, M.D., M.S. Melb, demonstrator and assistant lecturer in pathology in the University of Melbourne, Australia, On the Nature of the Antagonism between Toxines and Antitoxines. The authors refer to the controversy on this subject between Behring and Buchner, which appeared in the *Deutsche medizinische Wochenschrift* in 1894, Behring maintaining the chemical nature, Buchner the indirect physiological one, of the antagonism. At the present time, among authorities, Ehrlich and Kanthack support Behring in principle, while Buchner is similarly supported by Roux and Metchnikoff.

Calmette's experiments in 1895 with cobra poison and its antitoxine seemed to prove that the toxine of snake venom does not interact with its antitoxine *in vitro*, but only *in corpore*, and therefore that its action cannot be explained as a simple chemical operation between the two. Wassermann arrived at similar results with regard to the toxine of the *Bacillus pyocyaneus*; and further confirmatory results were obtained by Nikanarow and Marenghi. The sum and substance of all these experiments were that certain measures being found which destroyed either the toxine or the antitoxine, when these measures were applied to a mixture of the two *in vitro*, the one not affected remained active while the other became inert. The inference was that the interaction did not take place *in vitro*.

The authors, however, point out that the absence of any account of the *time* during which the interaction should be permitted to continue, as a factor in the experiments vitiates their results; and, while admitting that the same results can be repeated, they consider the conclusions founded on them unjustified, and assert that by modification of the factors—time, temperature, and active masses—exactly opposite results may also be obtained.

The upshot of the authors' experiments, which are abstracted in another column from the *Proceedings*, tend to prove that since the toxine of diphtheria will pass through a gelatin filter, while the antitoxine will

not, a mixture of the two *in vitro* would become separated by filtration, and the filtered toxine would be active unless it were previously neutralized by contact with the antitoxine *in vitro*. They found that a mixture of the proper neutralizing amounts, when left in contact at 30° C. for two hours, was not active after filtration, proving thus that the antitoxine had neutralized the toxine.

The authors say:

"As the experiments are so simple as not to leave any possibility of experimental error, we turned our attention to any existing difference in the conditions under which Calmette and ourselves worked. As previously pointed out, Calmette absolutely neglected the possible influence of time, temperature, and the relative proportions of the active masses of the toxine and antitoxine present in his mixture. Up to the present we have investigated the value of the factors, time and proportion of active masses, and have shown that these are most important. Indeed, by altering either the one or the other we can produce results which, if these factors be neglected, would lead to diametrically opposite conclusions. . . . We have not yet determined the influence of temperature upon the rapidity of the reaction, but our results so far seem sufficiently conclusive to decide the question and leave no room for doubt that the antagonism between the toxines of diphtheria and snake venom and their relative antitoxine is due to a direct chemical action which takes place between them. Further, that the opposite conclusion come to by Calmette, and presumably those of Wassermann, Nikanarow, and Marenghi, were due to their disregard of the value of time as a factor in such chemical action."

These experiments of Martin and Cherry are undoubtedly a great contribution to the scientific investigation of this important subject.

KIDNEY LESIONS IN MALARIA.

G. R. Picci has investigated (*Il Policlinico*, vol. v. 1898) the effects of malaria on the kidney. Besides producing a simple albuminuria, this disease may cause actual lesion of the kidneys, though the tendency to do so does not appear to be marked, and such renal lesions as are produced by malaria seem to be more common in autumn and spring than at other seasons, and more particularly occur in young patients. There does not seem to be, according to the writer, any relation between the severity of the one and the other; thus a slight attack of malaria may in certain patients produce well-marked nephritis, and renal lesions are not more liable to occur in a first attack than in any others. Usually the renal lesion is subacute and accompanied by few symptoms, and is desquamative or tubular in character, and in the great majority of cases there is restoration to health without any trace of the lesion being left. At the same time, should there be repetition of the malarial attacks, there is a marked tendency for a renal lesion to become permanent. Sometimes a nephritis of an acute character, and much more marked, may arise from malaria and pass into a chronic form, but the

author observes that some of the more usual features of the disease may be absent. Œdema is generally present. The renal attack may appear during the febrile period or after, the latter form being styled by the author post-malarial, as it may only first appear several days after the attack. It is possible that the so-called cases of malarial hæmoglobinuria are in point of fact instances of acute malarial nephritis. The writer refers to some rare cases of acute anasarca without albuminuria as occurring in malaria.—*Brit. Med. Jour.*

BACTERIA IN PROGRESSIVE CIRRHOSIS OF THE LIVER.

Adami (*Lancet*, August 12th, 1898), while investigating the so-called Pictou cattle disease of Nova Scotia, found a specific micro-organism in the form of a diplococcus. At times it was a stumpy bacillus, at others it was a diplobacillus, and resembled to some extent the micro organisms of hemorrhagic septicemia in the lower animals, but, unlike them, it had a faint capsule. It grew upon all ordinary media, and was pathogenic for rabbits, guinea-pigs and mice. This discovery suggested to the author, in view of its close histologic similarity to Pictou cattle disease, an investigation of human hepatic cirrhosis, and he succeeded in finding in stained sections of a large number of livers, more or less advanced in cirrhosis, a peculiar bacillus occurring as a very minute body, best visible with oil immersion lenses of from one-eighteenth to one-twentieth inch focus. The organism presented itself as an ovoid bacillus or as a minute diplococcus, surrounded by a distinct halo. The bacilli were present in greatest numbers in the liver-cells, but were also found in the new connective tissue and sometimes along the lymphatic capillaries, but so far have not been found in the bile-ducts. The sections, both of Pictou disease and of human cirrhosis, are prepared by staining the tissues with carbol-fuchsin and bleaching them afterwards in the sunlight. The author had no difficulty in securing cultures of the organism in Pictou disease, and, after many efforts, also succeeded in growing it from a case of cirrhosis of the liver, in a woman fifty-six years of age. In broth it assumed a diplococcus form. It was obtained not only from the liver, but also from other organs. The author asks to have his observations checked by other investigators, and suggests it as probable that the micro-organism causes not only cirrhosis of the liver, but also other hepatic diseases, as well as diseases of the kidneys and other organs.

MAGGOTS IN AN ADULT HUMAN EAR.

Dr. E. T. Walker, Callumsville, Pa., relates the following case:

I do not recall of ever having read of a large number of maggots being found in a human ear. On two occasions I found a few in children who had suppurating otitis media, and who were not of the most cleanly type of humanity, but in this instance I found them in a man of cleanly, careful habits. The case is as follows:

Mr. H., a retired farmer, aged 70 years, on August 6 called at my office for relief from a gnawing, burning pain. He said he had had no sleep for two nights. For three days there had been a watery discharge from the ear.

On examining the auditory meatus I found the canal filled with maggots, which were pretty well developed, measuring three-eighths of an inch in length; all were of about the same size, and, therefore, from the same deposit of eggs.

The removal was accomplished by picking them out with a dressing forceps and ear spoon, which was necessarily very slow, for they all were prone to lodge in the farthest part of the canal. After having removed 57 I quit, and dusted the ear with iodoform, expecting to destroy any that might have happened to escape my sight. Next day, on removing the iodoform dressing, I found one dead maggot, making a total of fifty-eight. The number was so large that I thought the case of sufficient interest to warrant this report. Had this man been in one of our military hospitals or on the Cuban battle-field the occurrence would have been less surprising.

One to 250 corrosive sublimate solution did not destroy the maggots; they would swim in it for an hour, and on removing them they were as active as when put in.

Hydrozone, 50 per cent., did not destroy life, and only when dusted with iodoform were the maggots rendered inactive and finally killed.—*Univ. Med. Jour.*

Dr. J. G. Caven relates a case unpublished, where a drunken man, aged forty, lay out in the woods over night. He came to him a few days after complaining of a tickling sensation in the ear. On examination, he found maggots, and removed between thirty and forty by syringing with bichloride of mercury 1 in 2,000. There was no ear disease.

H. B. A.

COMPENSATION FOR EXPERT TESTIMONY.—R. L. Pritchard (*Medical Record*), writing anent the recent decision of the Illinois Supreme Court affirming the case against Dr. Dixon for refusing to testify as an expert without compensation, says every witness is by the common law obliged to answer that which he knows, when all knowledge is one of facts. If the medical witness is asked a question in medical science the answer to which he absolutely knows, he has no legal right to refuse an answer. But when the expert is given a state of facts, as embraced in a hypothetical question, the witness does not know the answer until he proceeds to labor mentally, and as the result of such labor gives his conclusion. The medical witness has as much right to refuse to labor for the court as a carpenter has who refuses to construct a stairway for the accommodation of the judge. All that the medical witness has to do is to discriminate between scientific facts which he knows and opinions asked for upon such facts. He must answer the first; he is not bound to answer the second.—*Prog. of Med. Science.*

NOSE AND THROAT.

IN CHARGE OF

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PRIMARY EPITHELIOMA OF THE ANTRUM OF HIGHMORE, WITH THE HISTORY OF A CASE.

BY DR. WENDELL C. PHILLIPS.

(*Jour. Laryng. Rhin. and Otol.*, July, 1898, p. 325.)

In the earlier years all tumors of the superior maxillary bone were supposed to originate in the antrum of Highmore, even those that we now know to be primarily located elsewhere. Primary sarcoma of the antrum is not so rare, and it would seem that the earlier observers did not carefully differentiate between sarcoma and epithelioma.

A few authentic cases of primary epithelioma of the antrum are recorded in literature. Morel states that epitheliomata may originate under the periosteum or in the spongy portion of the maxillary bone, or they may originate in the antrum, starting in the epithelial layer covering the mucosa or in that lining the glands. Reclus reports two cases operated upon by M. Verneuil. Englisch reports one of epithelial carcinoma in the antrum. Verneuil, DeGaetano and Reinhard each report one case.

The case reported by the author is as follows:

J. G., German, aet. 53 years, came under treatment March 7, 1897. He always drank beer and light wines, and used tobacco. Six years ago remembers having had pain in the region of the right antrum. Three years previously several teeth in the right upper jaw, which were in a state of decay, had been extracted. The pain had continued, and, one and one-half years later, an opening had been made into the antrum through the alveolar process, through which opening there had never been much discharge of pus or blood. This opening had never closed. Four months ago he noticed a growth around this opening, which had rapidly increased in size. There was found to be a large cauliflower-like excrescence projecting from the alveolar opening. It was about two inches long from before backward, and three-quarters of an inch broad. It appeared to be a large mass of granulation tissues. Careful examination revealed a pedicle, which extended into the antrum, and which bled when touched with a probe. There was a sensation of fulness, with some pressure in the region of the antrum, but no external swelling or bulging, and no severe pain. Translumination revealed a dark area over the entire region of the antrum. There was no glandular enlarge-

ment. The nasal cavity upon that side was quite normal—no polypi, no excessive secretion. The eye did not protrude, and was normal in every way. Believing the growth to be made up of polypoid or granulation tissue, he was informed that an operation would be necessary for its removal.

The operation was performed at the Post-Graduate Hospital, March 15, 1897, under ether. The large, protruding mass was removed by a cold wire snare, after which a probe was passed into the antrum, which was found to be completely filled with the same kind of tissue. The opening was enlarged by means of curettes and gouges, until large enough to admit the finger, and the entire mass removed. Hemorrhage was excessive. Special pains were taken to curette every portion of the antrum, and the large opening made it quite possible for this to be accomplished. There was no indication of extension of the disease into adjacent tissues or sinuses. The cavity was thoroughly cleansed with bichloride solution, and carefully packed with iodoform gauze. The patient made an uneventful recovery, and after about six weeks the packing was discontinued, and the wound allowed to close up. From this time, to March 14th, one year after operation, he has been examined once a month. There are now no visible signs of recurrence, no pain or tenderness, nor glandular enlargement, and no loss of appetite or flesh. His weight is now 218 pounds. The opening into the antrum is still entirely closed; the eyesight is good, and there is no fetid or purulent secretion.

Microscopical examination of the growth was made and it was found to be an epithelioma. That the growth was primarily from the antrum there could be no doubt. Its gross appearance was certainly unlike epithelioma, which, together with the fact that primary epithelioma of the antrum is almost unknown, had led to the diagnosis of a benign growth.

That there has been no recurrence, is probably due to the apparent incipiency of the growth, enabling its thorough removal. The polypoid degeneration of the mucous lining had, no doubt, existed for a long time. Had there been extension into the adjacent sinuses, especially the ethmoidal and sphenoidal regions, or had the bony walls of the antrum become infiltrated or destroyed, or had there been extensive glandular enlargement, with a cachectic diathesis, the results would, no doubt, have been very different.

By thorough removal of the entire mass, however, it is to be hoped that all traces of the epithelioma have been obliterated. And the absence of recurrence after one year and two months have elapsed, would seem to bear out this conclusion. The large opening, allowing such thorough curettement, is also believed to have contributed to the successful termination.

A CASE OF FOREIGN BODY IN THE NASO-PHARYNX.

BY DR. LAKE.

A. B., male, aged three years, swallowed a marble a few hours previously. At first sight the child appeared perfectly well, but examina-

tion revealed a bulging of the soft palate. Palpation with nasal probe showed that some hard body was lying in the naso-pharynx. The child was put under chloroform, the head being kept slightly extended. The mouth gag was inserted and the naso-pharynx palpated. At once the smooth surface of the marble could be felt wedged in the naso-pharynx between the septum and posterior wall. By means of a pair of post-nasal forceps introduced behind the soft palate and pressure with a probe through the anterior nares, an ordinary red clay marble was extracted.—*Jour. Laryn. Rhin. and Otol.*, June, 1898.

A CASE OF EPITHELIOMA OF THE LARYNX—LARYNGECTOMY AND PARTIAL PHARYNGECTOMY; DEATH ON THE ELEVENTH DAY FROM EXHAUSTION.

BY DR. SHURLEY.

The patient was a woman, forty-five years of age, active and in good health until February, 1897, when, following an attack of grippe, she became conscious of pain in swallowing and during phonation. Pain on right side. By January, 1898, she had become very much emaciated, great dyspnea and dysphagia. Larynx nearly filled with a growth of lobular appearance which seemed to be strictly limited to the larynx. No glandular enlargement. Tracheotomy was performed, and ten days later, February 9, 1898, the operation was performed. The growth was found to have broken down posteriorily and involved the esophagus and pharyngeal wall, all of which was removed. Each edge of the lower portion of the external wound was folded in and stitched to the trachea according to the method of Cohen. By the use of Dr. Galye's anesthesia apparatus, which regulates the amount of air and anesthetic used, the whole amount of chloroform used during the two hours required for the operation, was but five drachms. The microscope confirmed the diagnosis of epithelioma. Death from exhaustion occurred on February 19th, twelve days after operation.—*N. Y. Med. Jour.*, July 16, 1898.

SERIOUS CONSEQUENCES FOLLOWING INTRANASAL OPERATIONS.

BY DR. LEVY.

The author reports one case of death following an Asch operation for deflected septum, in a highly nervous and probably syphilitic subject, from neglect in reporting for after-treatment and from use at house of sprays and apparatus which were not aseptic. The patient died fifteen days after operation, death being preceded by high temperature and pulse, a greenish-looking perforation of the septum, delirium, paralysis. The tongue protruded well to the right. A diagnosis of thrombus was made which was verified at the autopsy. Autopsy showed the left optic thalamus broken down and softened, plugging of the posterior cerebellar artery, endocarditis and splenic infarctions. Cause of death was general septicemia.

Case II.—Family history of asthma and phthisis. Patient delicate and of nervous temperament. Woman, aet .25 years. Had had grip twice, several of the exanthemata, frequent colds in the head, tonsillitis, etc., and had been a mouth-breather for years. She had hypertrophic rhinitis and a large exostosis of the septum upon each side. For the removal of these operations were performed upon March 26th and April 3rd, respectively, under cocaine. On April 5th the patient developed symptoms of cerebral meningitis and died April 7th. These are but two illustrations of the dangers of intra-nasal surgery. Bibliography is also given by the author, relating cases reported by Stoerk, Gocherer, Wagner, Lange, Rethi, Quinland and others.—*Ann. Otol. Rhin. and Laryn*, May, 1898.

SURGERY OF THE MIDDLE AND INFERIOR TURBINATED BODIES AND BONES.

BY DR. MYLES.

The author first describes the regional anatomy of the turbinates and then gives his attention to the various operative procedures; the principal conditions requiring operative interference being hypertrophy, hyperplasia, intumescence, polypoid changes, cysts, inoperable deflections of the septum, and where the turbinates are in the way of operations upon the deeper regions, such as the antral, ethmoidal, frontal or sphenoidal sinuses. In operations he first endeavors to render the nasal cavity aseptic. This is accomplished by cleansing with alcohol and packing with cotton saturated with bichloride solution from 1 : 1000 to 1 : 5000. Surgical wounds made in the nose during an epidemic of grippe are especially prone to infection.

The paper is accompanied by six illustrations, showing the various steps of the operation upon the middle turbinated bone as followed by the author, with the various instruments required, and also the histories of four cases of removal of portions of the inferior turbinated bone.—*N. Y. Med. Jour.*, March 19, 1898.

PERITONSILLITIS.—For several years I have treated all cases coming under my observation by thoroughly cleansing the throat and nose with a mild alkaline solution, followed by the application of spirits of turpentine and compound spirits of lavender, equal parts, disguising the taste by the addition of a few drops of the oil of anise or gaultheria. This is applied to all the inflamed tissue, as thoroughly as possible, with cotton on a fine applicator—behind the soft palate, into the crypts of the tonsil, and when possible between the tonsil and the pillars of the fauces. I order the patients to apply the above mixture every one or three hours. A mercurial followed by a saline laxative is usually indicated. Give as much nourishment as can be taken, either hot or cold, as most comforting to the patient. If an attack is seen early this treatment will abort it; later, it will prevent the formation of pus and the involvement of the opposite side, even though pus be already present.—*J. A. M. A.*

OBSTETRICS AND GYNAECOLOGY.

IN CHARGE OF
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CONTINUED IRRIGATION OF THE UTERUS VERSUS HYSTERETOMY IN ACUTE PUERPERAL SEPTIC METRITIS.

Horace Manseau (*Montreal Med. Journal*, July, 1898) in reporting seven cases of continued irrigation of the uterus in acute puerperal septic metritis says, that all the teachings of modern surgery urge the necessity of drainage; for this purpose the head, abdomen, and chest are opened. Why should not the same rule apply to the treatment of a septic uterus, whose cavity is especially favorable for the development of septic bacteria, the natural drainage of which is imperfect, due to the contraction of the os and sphincter vaginæ. Curettage should first be done, preferably with a dull curette, and afterward continued irrigation maintained. By this method the removal of the uterus may be obviated and future pregnancies occur. All of the seven cases reported recovered and five of them became pregnant again; the other two cases were lost sight of.

CASE I.—III. para, aged 28 years. Labor normal at term; placenta expelled intact; perineum uninjured. On the fourth day the patient had a child; pulse rose to 126; temperature, 103.5° F. Vaginal douche, 1-6000 sublimate solution, was given every three hours. On the fifth day she had another chill; temperature, 104.5° F.; pulse, 135. No fetor is evident. A mucopurulent vaginal discharge appeared. Intra-uterine douches were given every three hours with no marked improvement, except for a short time after each douche. The patient had chills lasting for an hour, followed by profouse sweating; pulse very weak. On the sixth day continued irrigation was begun. Sterilized water was kept flowing continually for twelve hours at the rate of seven or eight gallons an hour, and on the seventh day the temperature had fallen to 100° F., and the pulse to 115. General condition improved. Irrigation was stopped five hours later; the temperature was higher than ever. On the eighth day the irrigation was resumed and kept up for twenty-four hours; the temperature fell by this time to 99.5° F.; pulse, 110. During the absence of the writer a midwife who had been obtained had stopped the irrigation and assured the family that the case was a simple one. The patient's temperature had risen, and on the tenth day was 106 5° F.; pulse, 180. The husband again sent for the writer to take charge of the case, who found the patient delirious, abdomen tympanitic, the vagina bathed with pus. Several chills had occurred. Dr. Wallack was called in consultation, who concurred in the opinion that the irrigations should

be re-established. From seven to twelve gallons an hour were passed by means of a No. 12 male catheter in air tubes. After forty hours with but four intermissions of an hour each the temperature fell to 100° F. Even during the one hour intervals the temperature began to rise. On the twelfth day a few hours' rest was allowed, with the result of a slight chill and a rise of temperature to 101° F. Irrigation was again commenced and kept up with intermission of not over three hours for three days longer, when convalescence was established. If less water was allowed to flow than stated the temperature began to rise and even an hour's cessation allowed of a rise of from one-half to one degree. Over 2,200 gallons were passed into the uterine cavity during ten days of continuous irrigation. On the tenth day of the puerperium the patient developed pneumonia. This most severe case might well be considered as one calling for hysterectomy.

CASE II.—Seen on the twelfth day for the first time. Temperature, 105° F.; pulse, 150; abdomen tender; lochia fetid. Irrigation for thirty-six hours with four intermissions of one hour each reduced the temperature to 100° F. At the desire of the patient the irrigation was discontinued, but the temperature rose. Six days of irrigation resulted in complete recovery.

CASE III.—VI. para. Natural labor, except laceration of cervix. Four days later her temperature rose to 103° F.; pulse, 120. Severe chills occurred. The uterus was douched seven times at intervals of three hours, but the next day she was worse; temperature 104.5° F. Continued irrigation was commenced, using from five to six gallons of water an hour, with short intervals of suspension. Yet the temperature did not decline. After thirty hours the amount of water was increased to ten gallons an hour, and after eleven days recovery was complete.

CASE IV.—Seen first on the ninth day of her puerperium. Patient's temperature was 104° F.; pulse, 140. No discharge. Curettement the next day removed a large quantity of detritus. Intra-uterine douches kept up for twelve hours without effect. On the twelfth day continuous irrigation at the rate of eight gallons an hour was begun. The temperature fell from 105° to 101° F.; during a short rest of two hours it rose to 103° F. The irrigation was again instituted and continued for three days, when the temperature became normal.

Three other similar cases could be reported, in all of which recovery took place. It is found necessary to keep up the irrigation until the uterine cavity has undergone repair in order to secure permanent recovery.

The results of this treatment is sufficient to warrant its use, especially as it preserves the organs for future pregnancies, even if the results from hysterectomy are as good for the recovery of the patient.

FOREIGN BODIES IN THE VAGINA.

Nearly every medical man at one time or another has discovered, when examining a woman for fœtid leucorrhœa, the presence of a pessary long

forgotten in the vaginal cavity. M. Monod, of Bordeaux, relates some curious experiences he has made on the existence of various foreign bodies giving rise to the same symptoms. In one case he removed from a young woman a sponge which she alleged to have been inserted some time previously, in order to suppress an abundant discharge. The sponge was already in a state of putrefaction, and came away in pieces. A rather elderly woman came to the hospital to be treated for fœtid discharge. When the finger was passed up it perceived an ovoid foreign body, which, when extracted, proved to be a rosebud, in a good state of preservation. The patient pretended to know nothing about it.

Last spring he had occasion to examine a woman, æt. 60, of rather limited intelligence, for a double inguinal hernia. For a year before she suffered from vaginal discharge which was so fœtid that she had to isolate herself from society. Suspecting the existence of a neoplasm, he chloroformed the patient in order to make a proper examination, and to operate, if necessary. When he introduced the hand into the vagina he felt a hard mass which seemed to be independent of the surrounding tissues. Passing a long forceps in, he seized the body, and when he drew it out he found it was a large cork. Renewing his explorations, he successfully removed a thimble, a rag, a needle case, and finally a boot lace! The uterus was perfectly healthy.

HYDROCELE OF ROUND LIGAMENT.

Noll (*Centralbl. f. Gynäk.*, No. 29, 1898) relates three unpublished cases of "hydrocele feminæ." The first is specially important, as symptoms of strangulated hernia set in some six months after Noll had diagnosed a cyst of the right round ligament. There was vomiting and rise of temperature. The swelling in the right groin was as big as a goose's egg, hot, red, tender and firm, just as is seen in cases of strangulated hernia with gangrenous contents. Still, as Noll had seen the case when less acute, he concluded that inflammation of the hydrocele explained everything. This proved to be the case. The cyst was easily enucleated. Its walls and the surrounding tissues were infiltrated with bloody serum; it contained fœtid dirty-brown serum. It did not communicate with the abdominal cavity. The wound was drained, and the woman who was aged 32, began to recover directly after the operation. In the two remaining cases the hydrocele was also in the right round ligament. In the second two cysts were plainly detected on palpation. At the operation, as the upper cyst was being enucleated, a third, as big as a pigeon's egg, appeared; it lay against the inner abdominal ring, closely connected with the peritoneum. The muscular fibres of the round ligament ran on the right and external aspect of the walls of the three cysts. The cyst in the third case was completely invested by the muscular fibres of the ligament. Internally the tendinous pubic end of the ligament was found to contain a central channel as wide as a crow quill. There was no difficulty in removing the cysts in any of these cases, and all did well.

TRACHEOTOMY FOR THE REMOVAL OF A FOREIGN BODY FROM THE BRONCHI.

L. Szuman (*Nowing lekarskie, 1897, No. 47—Centralbl. f. Kinderh, 1898, iii., 218*) says a boy, 9 years of age, swallowed a small whistle. From the time of this accident he began to fail in strength, presented much fever, and was subject to violent dyspnea, and a severe cough. Szuman saw the patient five weeks after the accident had occurred. Exploration of the esophagus gave a negative result. It was, however, followed by a violent, spasmodic coughing paroxysm. Auscultation of the chest elicited the information that the left lung, particularly its upper portion, did not take part in the act of respiration; the percussion sounded dull over its whole surface. A laryngoscopic examination resulted negatively. The foreign body was undoubtedly wedged in the left bronchus. Placing the child in an inverted position, with the head hanging downward, and violently thumping the back was unsuccessful. Szuman, therefore, performed a low tracheotomy, probing into the bronchi through the wound, and felt a hard body in the left bronchus, 11 cm. from the incision, which, having been somewhat loosed by a Volkmann's spoon, and given the proper curve, was thrown into the opening of the wound at the next violent coughing paroxysm, and proved to be a signal whistle, 2.4 cm. long and 1 cm. broad. Recovery was uneventful.

A BUTTON-HOLE MAKER IN THE BLADDER OF A FIFTEEN-YEAR OLD GIRL.

A. Hanc (*Wiener med. Presse, 1898, xxxix., 580*) says this foreign body was 8 cm. long, consisting of an ivory handle, and an additional piece of steel, about one-half of the whole length of the instrument, which was sharply pointed. The patient had introduced this into her bladder, with the handle foremost. The instrument had become wedged in the wall of the bladder in an oblique direction somewhat to the right of the internal orifice, so that the blunt extremity lay towards the fundus. The subjective symptoms were insignificant; the patient did not even experience much pain when changing her position. The urine was slightly tinged with blood, became turbid and ammoniacal on the fourth day after the introduction of the instrument. The general condition was good; the temperature normal. The instrument was easily located in the bladder. Bearing in mind the pointed extremity of the body, its difficult removal through the urethra, the possibility of perforating the bladder in changing its position and to avoid rupturing the hymen, Hanc thought the high operation (sectio alta) necessary, but, nevertheless, made a previous attempt to remove the instrument by way of the urethra. The bladder was thoroughly irrigated with a solution of boric acid, and 200 grammes of the latter were allowed to remain in it; then a litrotrite for children (Charrière 13) was introduced, and the body repeatedly caught with exceeding care. These attempts at extraction were, however, futile, the instrument repeatedly slipping on account of the smooth surface of the foreign body. Hanc now dilated the urethra by means of graduated

sounds; as this was very painful, in spite of cocaine anesthesia, a high section was definitely determined on. Under narcosis another attempt was made at extraction, without a cutting operation.

After dilating the urethra with Simon's sounds to No. 16, the little finger of the left hand could be introduced, the foreign body dislodged and turned, and brought to the internal orifice, from where it was extracted with a blunt hook. No reaction followed this manipulation; the cystitis disappeared after a few antiseptic irrigations.

THE TREATMENT OF HÆMATURIA BY CANTHARIDES.—Having seen in the *British Medical Journal* of September 17th the interesting account by Dr. Beven of the treatment and cure of a case of hæmaturia by cantharides, I thought I would try it in a case which was then under my care, with the following gratifying result:

Mrs. C., aged 52, stated that she was passing a large quantity of blood in her water. I could find no pain, tenderness or fulness in the loins. Her temperature was normal, her pulse 100, weak. There was no puffiness under the eyelids, etc. She said that she had felt perfectly well up to the day preceding, when she first noticed the blood in her urine. The urine, though rather less in quantity than usual, was not scanty. As the blood did not come before or after the water, but was mixed with it, I concluded it came from the kidney. I ordered her to stay in bed, regulated her diet, etc., and put her on a mixture of liquid extract of ergot and liquor strychninæ. This mixture was continued for close on a week without having any effect whatever on the bleeding. I then determined to try the cantharides. I gave her m. v. of the tincture three times a day in water, as recommended by Dr. Beven. To my astonishment, in exactly twenty-four hours after she had taken four doses of the medicine the hæmaturia had completely disappeared. I then reduced it to one dose daily for two days, when I stopped it altogether, as there had not been the slightest return of the bleeding. It is now some weeks since her attack, and she is quite strong again.

OPERATIVE TREATMENT OF IRREDUCIBLE RETROFLEXION OF THE PREGNANT UTERUS.—Mann (*Am. Jour. of Obst.*, July, 1898) says that formerly there were two alternatives: replace the uterus or, failing this, empty it. He holds that the latter procedure should be replaced by opening the abdomen and pulling up the fundus by the hand introduced behind it. If the uterus be so large as to fill the pelvis completely, replacement by the vagina is unsuccessful, not because the uterus is too large to be forced through the pelvic brim, but because it is held down by atmospheric pressure, and it can then be replaced only by letting in air behind it. Moreover, pregnancy may exist when there are adhesions, which may be an insuperable bar to reposition till they have been broken up by the hand on the inside. Mann reports 2 cases in which abdominal section was performed after efforts to push up the uterus under anæsthesia had failed. Pregnancy was not interfered with in either case. He has found only one similar case, reported by Cameron, in the *British Medical Journal*, vol. ii., 1896, p. 1277.

MEDICAL SOCIETY REPORTS.

The various medical societies of the city are this year officered as follows:—

TORONTO MEDICAL SOCIETY.—

President,	W. J. Greig.
Vice-President,	F. Oakley.
Treasurer,	G. H. Carveth.
Corr.-Sec.,	R. D. Rudolf.
Rec.-Sec,	

PATHOLOGICAL SOCIETY OF TORONTO.—

President,	A. Primrose.
Vice-President,	H. B. Anderson.
Treasurer,	J. I. Mackenzie.
Recording Secretary,	H. C. Parsons.
Corresponding Secretary	J. T. Fotheringham.

CLINICAL SOCIETY.—

President,	F. LeM. Grasett.
Vice-President,	G. A. Bingham.
Corresponding Sec.,	H. A. Bruce.
Recording Sec.,	George Elliott.
Treasurer,	W. H. Pepler.
Executive,	Geoffrey Boyd.
	W. B. Thistle.
	Frederick Fenton.
	H. J. Hamilton.

THE TORONTO CLINICAL SOCIETY.

The forty-eighth meeting of this Society was held in St. George's Hall, Elm St., Nov. 9th, 1898.

Fellows present:—Wm. Oldright, Bingham, A. J. Johnson, Bruce, Peters, Grey, Fenton, H. B. Anderson, Lehman, Chambers, Ryerson, J. O. Orr, Pepler, Boyd, H. J. Hamilton, Parsons, J. E. Graham, W. H. B. Aikins, Stark, Cameron, Adam Wright, Grasett, A. A. Macdonald, Geo. Elliott.

Drs. A. A. Small, J. D. Thorburn, Geo. W. Badgerow, T. F. MacMahon, K. E. McIlwraith, and W. J. McCollum were elected Fellows of the Society.

Drs. C. R. Dickson, F. C. Hood and Chas. J. Hastings were proposed for membership.

Dr. Geo. Bingham presented a case of double talipes; operation, removal of astragali. Also lipomatous mass simulating spina bifida in same case.

The case was discussed by Drs. Peters and Wm. Oldright.

Dr. H. B. Anderson read a paper and reported a case of colloid goitre.

By invitation Dr. C. R. Dickson discussed the case. Drs. Graham, Cameron, Fenton, Bruce, and Boyd also participated.

The President, Dr. Grasett exhibited bullet extracted from Axilla; a knee-joint removed for tuberculous disease, another for supposed tuberculosis which, on examination by Dr. Anderson, subsequently appeared sarcomatous; and a third for sarcoma.

These specimens evoked an interesting discussion between Drs. Graham, Cameron, Anderson, Caven and Peters.

Dr. J. E. Graham reported an unusual case of staphylococcus infection. The patient had expired very suddenly. A post-mortem examination revealed no suppurating focus. The point of entry of the poison was not shown.

Dr. Graham reported also a case of Suppurative Cerebral Meningitis in a boy, from pneumococcus infection.

Drs. Peters and Anderson and Mr. Cameron discussed the cases briefly.

The usual refreshments followed, and completed a very enjoyable and profitable meeting.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The eighth annual meeting of the American Electro-Therapeutic Association was held September 13 to 15 at Buffalo, N. Y., in the Library Building. After an opening prayer by Rev. O. P. Gifford the Association was welcomed to Buffalo by Dr. Conrad Diehl, the Mayor; the address of welcome was responded to by Dr. F. B. Bishop of Washington, D. C.; reports of committees were then received. The following is the list of papers read:—

Phlebitis: A Clinical Study. By Dr. Margaret A. Cleaves, New York.

The Diagnostic and Therapeutic Relations of Electricity to Diseases of the Central Nervous System. By Dr. A. D. Rockwell, New York.

New Uses of the Undulatory Current in Gynæcology. By Dr. Georges Apostoli, Paris, France. (Read by Dr. G. B. Massey.)

Electricity in the Treatment of Uterine Fibromata. By Dr. Felice La. Torre, Rome, Italy. (Read by Dr. John Gerin.)

Electro-therapeutics in Gynæcology. By Drs. Georges Gautier and J. Larat, Paris, France. (Read by Dr. C. R. Dickson.)

The Use of Electricity in Gynæcology. By Dr. William J. Herdman, Ann Arbor, Mich. (Read by title.)

The Treatment of Uterine Fibroids by Small Currents Administered Percutaneously. By Richard J. Nunn, Savannah, Ga.

Treatment of Menorrhagia by Weak Current and Silver Internal Electrode. By Dr. Adelstan de Martigny, Montreal, Que. (Read by Dr. W. H. White.)

The Method for Using Cataphoresis in Conjunctival Inflammation. By Dr. Lucien Howe, Buffalo.

Electricity in Deafness and Stricture of the Eustachian Tube. By Dr. Robert Newman, New York.

Electricity in Acne Vulgaris and Acne Rosacea. By Dr. Grover W. Wende, Buffalo.

A Case of Lightning Stroke Without Serious Consequences. By Dr. William C. Krauss, Buffalo. (Read by title.)

Cases of Lightning Stroke Causing Diseases of the Eye. By Dr. G. Sterling Ryerson, Toronto.

High Tension Current in Neuritis. By Dr. Francis B. Bishop, Washington, D. C.

Electricity in the Treatment of Goitre. By Dr. Charles R. Dickson, Toronto.

Ten minute talks on Electrotherapy.

The Effect of Electricity Upon Tissue Metabolism. By Dr. William J. Herdman, Ann Arbor, Mich., and Dr. J. H. Kellogg. Battle Creek, Mich. (Read by title.)

The Galvanic Current in Gynæcology. By Dr. G. Betton Massey, Philadelphia, Pa.

Some Surgical Uses of Electricity. By Dr. Charles R. Dickson, Toronto.

Combined Use of Medicinal and Electrical Treatment in Some Affections of the Eye. By Dr. G. Herbert Burnham, Toronto. (Read by title.)

Electricity in Genito-Urinary Diseases. By Dr. Robert Newman, New York.

Treatment of Malignant Growths by Means of Electricity. By Dr. G. Betton Massey, Philadelphia, Pa.

Orthopædic Uses of Electricity. By Dr. Louis A. Wiegel, Rochester, N. Y.

The Functional Neuroses, with Special Reference to Neurasthenia; Their Pathology and Treatment. By Dr. A. D Rockwell, New York.

Electricity in Diseases of the Nervous System. By Dr. W. J. Herdman, Ann Arbor, Mich. (Read by title.)

A High Frequency Oscillator for Electro-therapeutic Purposes. By Mr. Nicola Tessla, E. E., New York. (Read by Dr. W. H. White.)

The Hydro-electric Bath with Sinusoidal Current in Disease. By Drs. Georges Gautier and J. Larat, Paris, France. (Read by title.)

The Use of the Hot Air and Light Bath in Disease. By Drs. Georges Gautier and J. Larat, Paris, France. (Read by title.)

The Electric Arc Bath. By Dr. Margaret A. Cleaves, New York.

The Electric Light Bath. By Dr. J. H. Kellogg, Battle Creek, Mich. (Read by title.)

Some Suggestions on the Possibilities of Cataphoresis. By Mr. John J. Carty, E. E., New York.

The Effect of High Tension Discharges upon Micro-organisms. By Drs. J. Inglis Parsons and C. Slater, London, England. (Read by title.)

The Action of X-Rays upon Tuberculosis. By Drs. J. Bergonie, Bordeaux, and Teissier, Paris, France. (Read by title.)

Two Years of Practice in Radio-therapy. By Drs. Georges Gautier and J. Larat, Paris, France. (Read by title.)

The President's Address: Aims and Claims. By Dr. Charles R. Dickson, Toronto.

The following officers were elected :—

President, Dr. Francis B. Bishop, Washington, D. C.

First Vice-President, Dr. Ernest Wende, Buffalo, N. Y.

Second Vice-President, Dr. W. H. White, Boston, Mass.

Secretary, Dr. John Gerin, Auburn, N. Y.

Treasurer, Dr. Richard J. Nunn, Savannah, Ga.

EXECUTIVE COUNCIL—Dr. Robert Newman, New York, for three years; Dr. G. Betton Massey, Philadelphia, Pa., for three years; Dr. A. D. Rockwell, New York, for two years; Dr. William J. Morton, New York, for two years; Dr. Charles R. Dickson, Toronto, Ontario, for one year; Dr. Frederick Schavoir, Stamford, Conn., for one year.

Next place of meeting, Washington, D. C., September 19th to 21st, 1899.

A resolution was passed calling on colleges and medical schools to devote more time to the teaching of electro-therapeutics and drawing the attention of the Association of Medical Colleges to the necessity of the same. The University of Buffalo was congratulated upon having shown its progress by establishing a chair of electro-therapeutics in connection with its medical school.

A reception was held in the University of Buffalo on the evening of the 13th, at which a number of most interesting addresses were delivered. On the evening of the 14th a smoker was given by Dr. Lucien Howe at his residence. On Thursday afternoon, the 15th, the yacht Huntress took the Association down the Niagara River and to Grand Island, where a dinner was given at the Island Club. There were also several tally-ho excursions and a visit by special car to the power house of Buffalo R. R. Company. These are only a few of many diversions provided for the entertainment of the visitors. Dr. Ernest Wende, Public Health Commissioner, was chairman of the committee on arrangements and well sustained his reputation as a most indefatigable as well as most successful worker for the comfort and enjoyment of all.

There was a splendid electrical exhibition in connection with the meeting held in the lecture room adjoining, which was a very popular feature. After the excursion on Thursday the members left for Niagara Falls and spent Friday morning on an excursion embracing a trip up the Observation Tower, and the electric roads on each side of the river. The afternoon was devoted to visiting the power house of the Niagara Falls Power Company. The meeting was the most enjoyable and successful in the history of the Association.

TORONTO CLINICAL SOCIETY.

The first regular meeting of the Toronto Clinical Society for 1898-99 was held at St. George's Hall, Elm St., on Wednesday, Oct. 12th, at 8.30 p.m., and proved to be probably the most successful and enjoyable in the long list of similar gatherings. The Fellows were present in very large numbers, and the character of the papers and discussions was very high.

The following was the programme :—

1. Presidential address—Dr. F. Le M. Grasett.
2. Case of muco-enteritis—Dr. J. E. Graham.
3. Case of angular curvature of the spine treated by Calot's method—Dr. A Primrose.
4. —Case of progressive muscular atrophy—Dr. D. C. Meyers.
5. Case of depressed fracture with secondary trephining—Dr. L. M. Sweetnam.
6. Splenectomy—Dr. J. A. Temple.
7. Some features of the British Medical Association meeting in Edinburgh—Dr. Geo. A. Peters.
8. (a) Knee removed for tubercular disease; (b) Bullets removed from axilla—Dr. F. Le M. Grasett.
9. Colloid goitre involving isthmus of the thyroid gland—Dr. H. B. Anderson.
10. Renal calculi—Dr. H. A. Bruce.

The election of a Recording Secretary in place of Dr. J. N. E. Brown, resigned, was deferred to next meeting.

Oct. 10th, 1898.

INTESTINAL PERFORATION.

DIAGNOSIS.—Ether as a means of diagnosis of intestinal perforations is more practical and better than hydrogen-gas, since it is always at hand, and necessitates no special apparatus, aside from what is already found in the surgeon's possession, and further, no objections can be given to its use on account of noxious properties, unfounded as these objections may be as to the hydrogen-gas. The quantity of ether being infinitesimal (1 drachm, or less, being sufficient to give up the necessary vapor, which is diluted many, many times by the air that carries it) absolute freedom from anæsthesia is assured. The method is simple: A small quantity of ether is poured into the bottle accompanying the aspirator of so-called French pattern. A soft-rubber catheter or rectal tube (preferably a long, glass douche-tube connected by rubber tubing) is jointed to one of the pipes of the aspirator-bottle. The air-pump is joined to the other pipe, and air forced into the bottle becomes mixed with ether-vapor and passes on through the alimentary canal, the rectal tube being inserted as far as necessary. This mixture, which may be called ether-air, rapidly finds its way through the coils of intestines, giving forth strong rumblings as it progresses onward, causing distension on entering the stomach, from whence it is belched, provided no perforation exists along its pathway. Upon reaching a perforation, however, the ether-air escapes into the peritoneal cavity, tympanites more rapidly develops, and upon dilating the wound-entrance down to the peritoneum, quickly comes out into the world, being at once recognized by its odor and the hissing sound of escaping gas. Upon opening the abdomen the distension of the intestine from the rectum up can be followed to the point of injury where the same odor and hissing are noted and the wound repaired. Continuing the search till no more ether-air is found escaping from the intestines one may rely upon its efficacy. E. M. Sutton (*Jour. Amer. Med. Assoc* July 23, '98).

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Editorial.

EXAMINATION OF THE REFLEXES.

The obscurity that enwraps the study of Nervous Diseases in the minds of most practitioners of the healing art is deeper than it needs to be. There is very much in the subject to baffle the keenest observer, and the ordinary clinician is apt, therefore, to exaggerate the difficulty of the whole subject, and so to leave untouched many of the more rudimentary problems, which have been thoroughly cleared up, or at least so far made clear that they can be easily utilized and made to be of great value in diagnosis. It seems that the examination of the Reflexes is one of these problems referred to above as rudimentary, but really simple. There are, of course, divergent theories, but as to the clinical value of the phenomena there can be no difference of opinion.

First of all, we may define *a reflex* as an involuntary muscular movement due to a sensory stimulus, and independent of the cerebrum so far as causation is concerned. It should be clearly distinguished from an *automatic* movement, which may be defined as one originating in the cerebrum, but independent of volition. The reflex is dependent upon

the cerebrum, so far as inhibition is concerned; but the arc by which it is produced has its highest point in the cord, at a level easily determined by anatomical knowledge, and its two arms, one the afferent, from the sensory surface—be that skin, mucosa, conjunctiva, or what not—to the posterior horn in the cord; the other, the efferent, from the anterior motor cells of the cord to the muscle that contracts. The two are, of course, connected by the grey matter in the cord between the posterior and anterior horns. An automatic movement, however, has no arc, in so far as it is purely automatic, but one arm, the impulse originating in motor ganglionic cells and travelling outwards by an efferent nerve. Physiologists are not yet agreed as to the exact nature of the process in what one may term the Organic Reflexes. Centres such as the Cardiac, Respiratory, Defecation and Micturition centres are certainly capable of true reflex action, the result of sensory stimuli. Some of them are believed to act in that way alone. But such a centre as the Respiratory is thought by some to be the seat of both automatic and reflex movements —unless for the purposes of argument we were to say that the pabulum brought to the cells of the centre by the blood was really a stimulus as much as if it had travelled in by an afferent nerve. The normal mechanism, for instance, by which respiration is established in the newly born infant may be said to be automatic, the state of the blood arousing the cells to the performance of their function; while the sensory stimuli applied to the centre by the usual artificial means, if it be slow in taking on its life-work, do undoubtedly act only reflexly.

The Cardiac centre, too, is held by some physiologists to act really only reflexly, the necessary stimulus reaching it from the heart when the proper stage of distention during diastole has been reached, and the endothelium has been sufficiently covered by the inflowing blood.

The main value of the reflexes, clinically, lies, of course, in the fact that we can by them inform ourselves of the state of the arc, especially of that portion situated in the cord itself, and at any level. The cutting off of the inhibiting power of the cerebrum, for instance in hemiplegia when the cortex is cut off, usually at the internal capsule, from its ordinary communication by the pyramidal tract with the spinal centres, is an interesting point, showing itself, as it does, in the exaggerated deep reflex (knee jerk) of the early post-hemiplegic state. The Reflexes may be classified as follows:—

I. *Organic*—1. Cardiac.
2. Respiratory.
3. Gastric.
4. For Micturition.
5. For Defecation.
6. For Erection.

II. *Superficial*—(with levels in cord)—
1. Plantar—(lower lumbar or upper sacral segments).
2. Glutral—(lower lumbar).
3. Cremasteric—(upper one or two lumbar).
4. Abdominal—(lower five or six dorsal).

5. Epigastric—(mid-dorsal, four to eight).
6. Scapular—(upper dorsal and lower cervical).
7. Conjunctival—(fifth and seventh nerve).
8. Pupillary—(optic and oculomotor nerves).
9. Faucial—(Glossopharyngeal).

III. *Deep*—(fascial, tendon or bone reflexes).

1. *Ankle clonus*—seen only in disease—due to stretching of tendo achillis—highest point of arc in sacral nerve centres—by internal poplitral and sciatic nerves.
2. *Patellar Tendon* reflex—seen practically always in health if properly sought for. Acting by *quadriceps extensor*, and anterior crural nerve. Highest point of arc therefore at second and third lumbar nerves.
3. In the upper extremity, the Triceps and Biceps tendon reflexes.

Of all these the most important are the knee jerk, the cremasteric, and the ankle clonus. Circumstances causing increase of the knee jerk may be classified under two heads:—(*a*) Increased irritability of cord itself, as in some cases of hysteria, in rabies, tetanus, strychnia poisoning; (*b*) interruption of the pyramidal tract by which the inhibiting impulse of the brain is conducted, as in hemiplegia, and other cerebral palsies, transverse myelitis, paralyses of spinal origin, such as disease of pyramidal tract, spastic spinal paralysis and amyotrophic lateral sclerosis.

The tendon reflexes are apt to be lessened or abolished in disease of any part of the arc: (*a*) Peripheral nerves, as in alcoholic neuritis, where, though the skin reflexes usually persist, the deep ones are lost; (*b*) disease of the anterior horns, as acute anterior poliomyelitis, progressive spinal muscular atrophy; (*c*) disease of posterior horns or posterior roots, or their connection with the anterior horns, as in locomotor ataxia, where, the absence of the knee jerk is a very important sign; (*d*) hemorrhage, tumors, or myelitis, according to exact position, whether at, above or below the highest point of the arc in the cord. J. T. F.

A PATENT IN THE UNITED STATES ON DIPHTHERIA ANTITOXIN.

Another of those amazing prostitutions of law in the interest of monopoly which we see in their perfection in the United States seems to have been perpetrated by the Board of Appeals at Washington on the application of a German Drug House. It even appears that Dr. Emil Behring, with whose name the discovery of diphtheria antitoxin has been hitherto so honourably associated, has lent himself to the patenting of the remedy. What the world would have thought of Jenner, or Koch, or Pasteur, or Lister, had they allowed such cold-blooded commercialism to smother the demands of professional decency, it seems that the world will henceforth have to think of Professor Behring. It is peculiarly galling to the American medical profession to reflect that the German self-seeker has come and secured from their government what his own government would indignantly refuse to grant him. It seems impossible to believe that

Behring and his company could have properly established a claim to priority in the discovery and manufacture of antitoxin for diphtheria, the contrary can be abundantly established. The patent, of course, does not affect us in Canada, still it is of interest to note the following offer from Parke, Davis & Co.:—

"We have retained the services of the foremost patent lawyers in the United States, Messrs. Betts, Betts, Sheffield & Betts, of New York City, and it is the intention of our Home Office to fight the pretended monopoly to the last trench. What we fear in the meantime is not the enforcement of the patent, but rather the possible intimidation to which the manufacturers and selling agents of the Behring serum may resort in their effort to alarm the physicians and pharmacists who place implicit reliance on our Anti-Diphtheritic Serum. We, therefore, particularly request that in any article which you may think proper to write for your journal, you will insert a paragraph assuring your readers emphatically that Parke, Davis & Co. will protect and defend them, at least the profession and the trade, from any legal proceedings that may be brought in the United States as a result of their purchase, sale and use of our serum, we assuming the entire expense of such defense. We do not presume for a single moment that our Government here in Canada will give any protection to the monopoly by granting a patent of any kind or description here.

"In connection with the whole subject we invite your particular attention to the fact that five distinct rejections of Professor Behring's application were interposed at Washington to the final granting of the patent. After each refusal the application was renewed only to be again rejected, until finally, and as late as June 21, 1898, the patent was granted by the Board of Appeals in Washington, in clear contravention of both law and justice.

Very truly yours,

PARKE, DAVIS & CO."

The energetic protests of the American medical journals do them credit, and we sympathize sincerely with them. As *The Medical Age* says:

"It is almost superfluous to point out to any well-informed reader that Behring's claim to have done this is as preposterous as it is unjust. The principles upon which immunization to diphtheria was finally achieved were of gradual growth, the outcome of researches by thousands of untiring workers. The foundation of the work was undoubtedly laid by Pasteur in his method of immunizing against chicken cholera and anthrax. So long ago as 1887 Sewall immunized pigeons against the poison of rattlesnakes. He says, with genuine modesty, his work was undertaken with the hope that it might form a worthy contribution to the theory of prophylaxis, and it was a most worthy contribution. In 1887 Roux and Chamberland immunized animals against malignant œdema with sterilized anthrax cultures. In 1890, the same year in which Behring and Kitasato published their results in immunizing animals against diphtheria and tetanus, Fraenkel published his results in diphtheria after treating animals by weakened germs and filtered cultures. In the clinical uses of the serum Aronson's name must not be forgotten. His serum was first used in the Children's Hospital at Berlin in 1894. The serum of Roux

had been used in one of the hospitals of Paris a month earlier than Aronson's in Germany. Emerich and Aronson both dispute the priority of Behring, and the French Academy of Sciences awarded their prize for antitoxin jointly to Behring and Roux, a fact which very clearly denotes the difficulty of estimating priority of merit in a scientific struggle in which the numerous competitors were so equally distinguished.

"If Professor Behring admits any merit in the work of his predecessors and contemporaries, his c aim to be the exclusive inventor of diphtheria antitoxin is in contravention of all the ethics of a scientist's career. His claim is an offence against common morality. Had Simpson patented chloroform anesthesia, or had Lister patented antiseptic surgery, the world would have had two selfish empirics, and lost two medical heroes. If Behring, by the righteous judgment of mankind, can be adjudged sole and undisputed inventor of antitoxin, he has a place in the Temple of Fame for achieving the most beneficent discovery of modern times. It remains to be seen whether the temptation to be rich will overcome his ambition to be great, and whether for a tinsel crown he will barter a diadem of everlasting renown."

THE NEW PHARMACOPŒIA.

The appended resolution is self-explanatory. It seems right and proper that, so far as possible, concerted action should be taken in the matter. It would have conformed more closely, we fancy, with the probable practice of the profession at large had the resolution read otherwise, and said that prescriptions would be compounded according to old Editions of the B. P. unless the new ones were specially mentioned. It is part of the conservatism of the profession to continue to use remedies whose dose, strength and action are familiar.—ED.

"RESOLUTION:—Whereas a revised edition of the British Pharmacopœia has been issued containing numerous and important changes, and whereas uncertainty exists as to the date under the British Pharmacopœia, 1898, is to be considered in force.

"RESOLVED:—That the Canadian Medical Association in annual meeting assembled recommends that October 1st, 1898, be taken as the date on and after which, in the absence of instructions otherwise, physician's prescriptions should be compounded with the preparations of the British Pharmacopœia of 1898."

Editorial Notes and Clippings.

We append the returns, so far as they are available, from the election contest now pending in the Medical Council:—

TERRITORIAL REPRESENTATIVES.

Division No. 1.—J. L. Bray, Chatham.
" " 2.—J. A. Williams, Ingersoll.
" " 3.—W. F. Roome, London.

Division No. 4.—J. A. Roberts, Stratford.
" " 5.—L. Brock, Guelph.
" " 6.—J. Henry, Orangeville.
" " 7.—Stuart, Milton.
" " 8.—Glassco, Welland.
" " 9.—J. Hanby, Midland.
" " 10.—E. J. Barrick, Toronto.
" " 11.—A. A. Macdonald, Toronto.
" " 12.—J. H. Sangster, Port Perry.
" " 13.—J. W. McLaughlin, Bowmanville.
" " 14.—T. H. Thornton, Consecon.
" " 15.—W. W. Dickson, Pembroke.
" " 16.—J. Lane, Mallorytown.
" " 17.—R. W. Powell, Ottawa.

COLLEGIATE REPRESENTATIVES.

Of these, the only one so far appointed is James Thorburn, for Toronto School of Medicine.

The Homœopathics are holding an election for the five to whom they are entitled.

The fact that so many divisions have returned their members by acclamation would appear to argue the complete allaying of the discontent that stirred the usually placid pool a few years ago. It may perhaps be urged that the absence of a contest is a thing to be deprecated, depending, as it sometimes does, on the quiet subterranean work of the would-be candidate, who gets so many men pledged months in advance, that no opponent has a chance when the time for balloting draws near. One can easily imagine circumstances in which the easy, happy-go-lucky temper of the profession at large might lead it into serious difficulty, though it does not seem that at the present time there is any issue at stake such as led to the tub-thumping of a few years ago.—[ED.]

DEATH FROM MORAL AUTOTOXEMIA.

A number of years ago we knew a member of the medical profession who was apparently without that part of the normal cerebral outfit called the moral sense. It might be somewhat harsh to say that he was a moral idiot, because it was plainly not so much a case of degeneration or atavism, as it was that none of his ancestors had been endowed or had acquired the essentials of ethics and humanization, and therefore the fates had been unkind to the boy at birth. He was in that state of arrested development which biologists illustrate by a number of species of animals and plants, and which *e. g.* is known in politics as "the boss," and in medicine as "the newspaper doctor." The significance of his life consisted in the lessons to be gleaned from it by would-be imitators, and by those of his professional co-workers who were compelled to suffer from his influence. He was considerable of an ignoramus, and therefore never was intellectually capable of seeing the necessity of a really shrewd

aping of morality; he never quite learned that it was politic to be perfect in his hypocrisies. He was always judging others after his own standards and therefore soon lost what little tact he ever had and began to blunder sadly in his tricks. He had, for instance, so long and so successfully supplied lay newspapers with secret advertisements of his operations, his goings and comings, his health and his social doings, that he constantly erred and showed the public the machinery of the mystery, and even made himself the butt of ridicule of amiable reporters and city news editors.

As in all such cases the psychic organism, following the known laws of physiology, began to grow foul with ptomains and retained secretions. Mental auto-intoxication increased despite excellent purges and antitoxins until colleagues and even those much of his own ways of mental make-up began to shrink from him; finally kind death put an end to the nuisance.

This, as we say, was a long time ago, and yet to-day the habit of the medical profession, the cowardice of the censors of medical societies, and the prevalence of "politics" in professional institutions, permit the constant repetition of the phenomenon. It is of course becoming harder for the charlatan to retain his "brilliant success," but for a time the trickster's office is filled and his hospital-positions and professorships multiply. Soon, however, difficulties and doubts arise, the mental vigor wanes, blunders increase, the suspicion of friends grows to disgust, and finally, again, psychic autotoxemia results in death. But what a mistake on the part of the profession to keep on repeating the stupid experiment.—*Philadelphia Medical Journal.*

CARE OF INEBRIATES.

The *Quarterly Journal of Inebriety* for October has this to say editorially of the paper read by Dr. A. W. Rosebrugh at the Canada Medical Association meeting last autumn :—

"Dr. Rosebrugh's paper on the treatment of inebriates suggests a very practical plan for the immediate care and treatment of acute inebriates. An alcoholic ward, in city and local hospitals, where restraint and medicine can be used, would show to the public the practical nature of such efforts, in the cure and prevention of a certain number of cases. This would be a simple, inexpensive way of proving the value of medical treatment, and would soon create the demand for a farm hospital. We commend this plan to our Canada friends as the beginning of a most practical work."

GASTRIC ULCER.—Excellent results have been secured by giving large doses of bismuth, thirty, forty, and even fifty grains, three times a day, suspended in water, after ordinary doses had failed to be of benefit. Under these the pain was rapidly relieved, vomiting ceased, digestion improved—allowing light nitrogenous food, such as fish or fowl, to be given—and the ulcer quickly healed. The bismuth sometimes caused a little pain and diarrhœa, but never constipation. The treatment was employed chiefly in chronic cases, but in some of the acute variety after recent hematemesis

it also proved successful. In acid dyspepsia, too. it rapidly relieved the symptoms. There are certain dangers and inconvenience that attend the use of the stomach-tube and lavage, but in some cases such a procedure seems imperative; here it is best, after lavage, to inject from three hundred to four hundred and fifty grains of bismuth suspended in water through the tube.—DRESCHFELD, in *London Lancet.*

THE RENEWAL OF PRESCRIPTIONS, ETC., IN GERMANY.—We in Ontario are somewhat prone to plume ourselves upon the perfection of our Medical Act, especially when we are congratulated by some of our friends from the stamping grounds for fakirs, which lie unprotected to the south of us. Our complacency may be perhaps curtailed by reading the following clipping from the Philadelphia *Medical Journal.* The motive of the decision of the German Minister is perfectly plain; the public protection, not the financial interest of the profession. Some external remedies, however, if repeated, could work great harm, such as mercurial ointments, cocaine sprays, or certain eye salves, without proper supervision.—[ED].

"A recent decision of the Ministry of Public Worship, of Education, and of Medical Affairs in Germany is of interest. Prescriptions for internal use in Germany may not be repeated for the patient by an apothecary unless the physician signifies his approval in writing. External remedies, however, may be repeated. Substances prescribed as eye-washes, for inhalation, for subcutaneous injection, or for clysters and suppositories are by this recent decision classed among internal remedies as regards their repetition, though the regulations as to bottles and labels that hold for external remedies still apply to them."

AN ABDOMINAL OPERATION ON THE SULTAN'S DAUGHTER.—The European press has reported an operation that is probably destined to have much more than ordinary significance and import. The daughter of the Sultan of Turkey was operated on successfully for what, so far as can be gathered from unauthoritative sources, would seem to have been hypertropic stenosis of the pylorus. The operation was performed by Djemil Pasha, whom visitors to the surgical section of the recent International Medical Congress at Moscow will remember as an unassuming young man, who, though the representative of the Turkish Government, was only in evidence when he had something to say, which he did briefly and pointedly. After the operation he received the Osmanic order. Seven surgeons were present at the operation and the dissemination of the knowledge of the operation among the Turks is likely to have a most salutary effect with regard to the medical and surgical treatment of Turkish women by men.—Phila. *Med. Journal.*

The New York *Evening Post* of March 26, in a semi-editorial article, shows the following remarkable appreciation of the work and character of physicians: "Their opportunity is unique, but their influence and assistance in the history of our households is a great testimony to the sympathy and patience and large-hearted comprehension of man with and for his fellow man in this urgent, crowded, self-seeking age of ours.

Human brotherhood, which has no name or guild, is vitally alive among our doctors. Sleepless nights and anxious days, hours of tense apprehension, the exertion of almost superhuman ingenuity to relieve pain, mark the going to and fro of many a quick-moving 'buggy' in our busy streets; and if one in a thousand is so fortunate as to acquire wealth as the result of his practice, let us rejoice for him."—*The Medical Age.*

ATROPINE IN HÆMOPTYSIS.—The following paragraph occurs in an original article by Thomas, of Washington, in the *Philadelphia Medical Journal*, on the subject of hæmoptysis and its treatment by atropine hypodermically:—

In a report to the American Climatological Association, in May, 1896, upon the treatment of hemoptysis, Dr. Robert H. Babcock expresses the belief that if anything will promptly arrest profuse pulmonary hemorrhage hypodermic injections of atropin in doses of gr. $\frac{1}{60}$ to gr. $\frac{1}{25}$ will. Dr. Winslow Anderson, of San Francisco, in his article on "Hemoptysis" in the *Twentieth Century Practice of Medicine*, says: "Atropin, gr. $\frac{1}{100}$ hypodermically, has proven invaluable in stopping the hemoptysis of phthisis;" and in reply to a recent letter he states that he has found nothing better than gr. $\frac{1}{100}$ of atropin hypodermically in rather more than 50 cases of hemoptysis.

In 1898 Dr. N. W. Soble reported 4 cases of hemoptysis treated with atropin with excellent results. Dr. Soble writes me that since then he and his friends have used the drug in the same manner with most satisfactory results. When he desires a prompt effect he gives gr. $\frac{1}{60}$, and if necessary he repeats the dose in 15 minutes.

Hausmann, of Meran, reports 3 cases of recurring hemoptysis in which the bleeding would not yield to other remedies, tried *ad nauseam*, but was arrested promptly by atropin hypodermically.

R. A. Stirling, at a meeting of the Medical Society of Victoria on November 14, 1888, reported a case of very profuse hemoptysis that would not yield to ergot and other commonly used agents. The patient being *in extremis*, atropin gr. $\frac{1}{150}$ was given hypodermically, and the hemorrhage was controlled at once. The injections were continued every 6 hours for 24 hours, when, thinking perhaps the arrest might have been accidental, the injections were stopped for 12 hours, with the result of a fresh severe hemorrhage, which was at once controlled by the renewal of treatment. Tacke seems to have been the first to call attention to the use of atropin in this condition, as well as in menorrhagia, in preference to ergot. He reported in 1881 having used it 5 times in two cases.

VOMITING OF PREGNANCY.—"I have not failed once for many years, by putting a blister over the fourth and fifth dorsal vertebræ, to put an end at once to sickness of pregnancy during the whole remaining period of gestation, no matter at what stage of the case I was consulted." So says Professor Parvin.—*The Medical Age.*

Book Reviews.

THE AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. N. Dorland, A.M., M.D., Assist. Obstetrician to Hospital of University of Pennsylvania, etc. Over 26,000 words. $1.25 net. J. A. Carveth & Co., Canadian Agents; W. B. Saunders, Philadelphia, 1898.

An exceedingly compendious preparation, a very excellent piece of book-making. One or two mispronunciations may be noted in spite of the editor's care. "*Arōbum*" for "*Ardbum*," for example; or "*Coup de soleil*" pronounced "*Koo-da-só-lāl*"!

ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS AND PRESCRIPTION-WRITING—(Saunders' Question—Compends No. 7). By Henry Morris, M.D., Fellow College of Physicians, Philadelphia, etc. 5th Edition, 1898. J. A. Carveth & Co., Canadian Agents. W. B. Saunders, Philadelphia. $1.00.

We have already expressed dislike of the system of teaching by quiz-classes and compends as tending to develop but little intellectual bone and sinew, and to produce rather an invertebrate type of student. Of its kind this is a very excellent example, and, as a means of reviewing the "high points," most useful.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE FOR USE IN TRAINING-SCHOOLS FOR ATTENDANTS AND NURSES IN MEDICAL CLASSES. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital for Nervous and Mental Diseases, Flint, Mich.; formerly Medical Superintendent of the Eastern Michigan Asylum; Member of the American Medico-Psychological Association, etc. 2nd Edition, thoroughly revised. 5½ x 7¾ inches. Pages ix–116. Extra cloth, $1.00 net. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia; 117 W. Forty-Second St., New York City; 9 Lakeside Building, 218-220 S. Clark St., Chicago, Ill.

This is a very well-made book. It is also a most succinct and useful bringing together of the rudimentary facts and principles necessary for the classes for whom it is written, under the three heads of Psychology, Insanity, and Management of Cases. The work bears the stamp of being the offspring of experience.

PRACTICAL URANALYSIS AND URINARY DIAGNOSIS: A MANUAL FOR THE USE OF PHYSICIANS, SURGEONS, AND STUDENTS. By Charles W. Purdy, M.D., LL.D. (Queen's University); Fellow of the Royal College of Physicians and Surgeons. Kingston; Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys"; also of "Diabetes: Its Causes, Symptoms, and Treatment." 4th, Revised Edition. With numerous illustrations, including photo engravings and colored plates. In one crown octavo volume, 365 pages, bound in extra cloth, $2.50 net. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia; 117 W. Forty-Second St., New York City; 9 Lakeside Building, 218-220 S. Clark St., Chicago, Ill. For sale in Great Britain by Sampson Low, Marston & Co., Fleet Street, London, E.C., England.

Nothing new need be said of so classical and standard a work as this of Purdy's. We welcome a 4th edition in the short space of three years from first publication, both for the sake of the profession, and as evidencing the capacity and repute of our distinguished fellow-countryman, whose Dedication runs as follows:—"To the Professors Past and Present, to the Fellows, Alumni, and Students of my Alma Mater."

CLINICAL LECTURES ON MENTAL DISEASES. By T. S. Clouston, M.D. Edin., F.R.C.P.E.; Physician Superintendent of the Royal Edinburgh Asylum for the Insane; Lecturer on Mental Diseases in the University of Edinburgh, etc. 5th Edition, 727 pages. Lea Bros. & Co., Philadelphia and New York, 1898.

As the author says in the preface, "A Medical Book that is coming out in its Fifth

Edition should need no Preface. The demand for it has absolved the Author from any further explanation of its existence."

The work consists of a series of twenty lectures, each of an exhaustive and monographic character, carrying the reader in orderly fashion through the subject from the opening lecture on "The Clinical Study of Mental Diseases" to the "Summary of the General Treatment and Management of Insanity looked at as a whole, and on the Use of Hypnotics, Sedatives, and Motor Depressants." There is also a series of nineteen very excellent plates, with descriptive letterpress which add very greatly to the value of the work, especially to the busy practitioner who cannot make time for histological work.

THE MIND READER. By L. M. Phillips, M.D. Publisher, F. Tennyson Neely, New York and London. A novel built up on the strange mixture of a modern fairy tale as extravagant as Aladdin of Arabian Nights fame, combined with a blood and thunder dime novel, and containing all the inconsistencies and discrepancies of both. It is hard to tell whether the writer expects us to believe there are mortals with supernatural powers such as some of his characters, or wishes us to understand he is drawing on his imagination, but he finds no difficulty in having them convey thoughts, nay, even converse with bands of men a few thousand miles away. A strong young college graduate would hardly consent to have himself hypnotized and impressed without any previous explanation, and the air in the west must be conducive to rapid bone-union when a delicate young girl can get up in a week after fracturing an arm and make a rough mountain journey on foot. It is also generally supposed that cowboys or scouts, dressed in spotless fringed buckskins bristling with firearms and knives, had almost gone out of date. Still the story is full of action, never slow, and fairly interesting, its strong point being the vivid and highly-colored pen pictures of its hypnotic scenes.

DISEASES OF THE EAR, NOSE AND THROAT. By Seth Scott, Bishop, M.D., D.C.L., etc., Professor of Diseases of the Nose Throat and Ear, Illinois Medical College, etc., p. 554. The F. A. Davis Co., Philadelphia, Pa.

This is the second edition published within the short period of eighteen months. It abounds in illustrations. The letter press is distinct, and the style easy. The plates are numerous and fairly accurate, and in themselves give much information that should be of assistance to the student, within whose reach this volume is placed by its comparatively low price.

A volume, however, which is intended for the use of students should aim at covering the entire field of the subject and at the same time give each subdivision its proportionate share of attention. We cannot feel that this has been done in the volume before us. Nor is the pathology or treatment as up to date in every instance as we had hoped to see it. In the section on the nose for example the subject of hay fever is somewhat extensively treated, and yet is unsatisfactory in that the student receives little aid that will be of practical service while *uric acid* as a cause is exploited at the sacrifice of others, such as septal deformities, which play so important a part in many cases

In the article on Atrophic Rhinitis, the author simply repeats the dictum that it is the third stage of the process in which Hypertrophics Rhinitis is the second; without making any explanation of this fact, that a very large proportion of our cases occur in children, whereas Hypertrophic Rhinitis is commonest after the age of puberty.

One of the most useful forms of treatment of this disease is with Acid Tartrate of Aluminium, as recommended by McBride of Edinburgh—but no note is made of it.

In speaking of the treatment of deformities of the Septum, and the author says very little on this highly important subject, the use of Connolt Jones' spokeshave is omitted, and yet it has largely replaced the Bosworth saw in removing spurs.

A TEXT BOOK OF PRACTICAL THERAPEUTICS. With especial reference to the application of Remedial Measures to Disease and their employment upon a rational basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, of Philadelphia. With special chapters by Drs. G. E. de-

Schweintz, Edward Martin and Barton C. Hirst. New (seventh) edition. In one octavo volume of 770 pages, illustrated. Cloth, $3.75; leather, $4.50, net. Lea Brothers & Co., Philadelphia and New York.

We have received the seventh edition of this well known work, and find it, like its predecessors, thoroughly up to date in every particular.

Doctor Hare's book is, as it claims to be, above all things practical. Considered from a literary point of view, his writing lacks the charming breeziness and fascinating beauty of English that marks the work of Lauder Brunton and makes its perusal a keen delight to the older practitioner. On the other hand, though not so full of detail as the latter, this work of Doctor Hare's contains much more matter, and is on this account, pre eminently fitted for the student. Many pointers, which we older men had to find in the past by experience are here laid down accurately and concisely and will be found of immense advantage to the young practitioner. The book is very happily divided into four parts. Part I. deals with therapeutic considerations and the classification of drugs and incompatibles Part II. treats of drugs and, though fairly complete in arrangement is somewhat sketchy as to detail, especially in the part dealing with the physiological action of drugs; it does not pretend to be a complete pharmacopœia, but in this matter, contains everything necessary for the student or practitioner, and has kept pace with the times as to new drugs. Part III. is entitled, "Remedial Measures other than Drugs," and cannot be too highly praised or too earnestly commended to the young practitioner, who will indeed find it a valuable and practical help to him in this wide branch of his work. We would especially mention the article on "Cold as a Remedy." "Heat," "Counter Irritation," "Enterocl sis," and "Lavage" as giving clear, concise information to the student on matters concerning which he finds his knowledge sadly deficient, when brought face to face with cases that need any of these necessary adjuncts. This part treats also of food for the sick, and embraces diet tables and methods of preparation and administration. Part IV. is on "Diseases with Appropriate Treatment," and is, of course, very sketchy; in fact, did it not contain many cleverly compounded prescriptions, it would be of little value, being too casual for practitioner or for student, and, therefor, too apt to lead the latter away from the perusal of works more thorough in detail Here we must in fairness, note how Doctor Hare carefully points out that the work is distinctively on therapeutics and not on medicine. This last part contains also a "Table of doses of Medicines," "Tables of relative weights and measures in the Metric and Apothecaries' Systems," "Index of Drugs and Remedial Measures," and "Index of Diseases and Remedies."

We heartily recommend the book to the medical world. It is well and clearly expressed and contains but little padding, and the writer, though deficient in elegance of style, has adhered closely to his subject matter in a business-like and practical manner, which renders his work a valuable help alike to the busy practitioner and to the student who aspires to become one in his turn. A.B.

THE SCIENCE AND PRACTICE OF MIDWIFERY, by W. S. Playfair.—After a work has reached its majority and exhausted nine editions, no words of introduction are necessary; it is only with the view of drawing attention to the last work and incidentally congratulating the author on his success in again bringing his valuable work up to recent date, and maintaining for it the place it has long held as an authority. Certain changes have taken place due to more modern investigation, new plates and wood cuts are introduced while certain ones have been suppressed as unsatisfactory. There is also a valuable chapter on Conception and Generation by Dr. F. W Eden, as well as sections on Bacteriology by Prof. Crookshank, with plates thus rendering the work entirely modern and satisfactory for either the teacher or student of midwifery.—C.A.T.

Books Received.

HISTOLOGY—NORMAL AND MORBID: By E. K. Dunham, Ph.B., M.D, Professor of Pathology, etc., in the University and Bellevue Hospital Medical College, New York. Lea Bros. & Co, New York and Philadelphia, 1898. Pp., 448, 363 engravings.

The Canada Lancet.

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ORIGINAL ARTICLES AND COMMUNICATIONS.

SERUM THERAPY.*

JOHN L. DAVISON, B.A., Univ. Tor., M.D., C.M., M.R.C.S. Eng.; Member of the Acting Staff of the Toronto General Hospital; Professor of Clinical Medicine Trinity College.—20 Charles Street.

MR. PRESIDENT AND GENTLEMEN,—The wideness of the subject which forms the title of this paper, together with the limited time at my disposal, must be an apology for its imperfectness, or, rather, incompleteness. Much valuable material which I had collected, in the way of statistics, must be left out, and the gist only of the results of observation can be given here.

From conversations with medical men, I have been forced to the conclusion that a deal of loose and unscientific thinking is done about serum therapy by many who should know better; may I, therefore, be allowed to define certain terms necessary to be thoroughly understood if we are to speak and think clearly and scientifically together for a few moments upon this subject, so far-reaching in its importance to us as medical men, and to those who are entrusted to our care.

The whole idea of a serum therapy is based upon the fact that in all germ diseases a substance called antitoxin is produced. To understand how this substance comes into existence let us consider for a moment the terms germs, toxins, serum, antitoxin, unite.

The germ of, say, pneumonia, is the specific cause of the disease, the pneumococcus, while the toxin is a complex poison produced by that germ. If the *germs* of pneumonia be introduced into a susceptible animal they will produce pneumonia, while if its toxins are introduced they will produce acute poisoning.

Antitoxin is one thing, and *serum*, its vehicle or menstruum, is quite another. The antitoxin, nature's remedy against the toxin produced by the life processes of the germ in the tissues of the animal body, is a substance dissolved in the serum, and is a remedy, an antidote against the toxin in the system of the victim of, say, pneumonia.

Each germ disease has its toxin, and, presumably, its antitoxin. Antitoxin does not exist in any appreciable quantity in the blood of healthy animals, nor is it found in nature at all in sufficient concentration to be useful as a therapeutic agent. It is found in milk, in the blood of the horse

* Read before the Ontario Medical Association.

and in human blood, but never, so far as our present knowledge goes, in any appreciable quantities, before the animal has been acted upon artificially, or has contracted the disease. Shall we consider the *modus operandi* of the artificial production of this wonderful substance?

Commercial enterprise, united to scientific research, has given it to us —this *mush allah*, to which we, and scientific men all over the world, are to-day looking as THE Mecca—our Mecca in the preservation of human life.

Take that best-known disease, diphtheria. In the laboratory, the toxins are separated from the germs which produce them, by a delicate filtering process through unglazed porcelain. The details of the process are minute, and their description would consume too much of your time to be spoken of here. Suffice it to say that the production of the toxin of the Klebs-Lœffler bacillus is safeguarded by every means that human ingenuity can suggest, science compass, and money procure.

This product, *toxin*, is a clear fluid, sparkling and straw-colored, which in passing through the filter of unglazed porcelain has left behind all germs and suspended particles. It is really a solution of toxin in an organic fluid, and goes by the name of toxin, but, it should be remembered, contains also various complex substances, as peptones, ptomaines, etc.

The substance, however, which gives the whole a virtue is the toxine, the alkaloidal, may I call it, product of the diphtheria germs, when grown in a suitable culture medium.

This then is the substance, this is the poison produced artificially in the laboratory, which when produced naturally in the tissues of the human body, is dissolved in the blood, carried to every cell of the organism, and produces the baneful effects with which we are all unhappily too familiar, by its toxic action upon the nerve centres and through them upon the whole economy, for be it remembered that it is not the *germs* that cause disease and death in diphtheria, but their product, toxin, just as any other poison would do, as, say, morphia. The morphia is manufactured outside the body and if introduced into the circulation in sufficient quantity will cause death in its own peculiar way. The toxin of diphtheria is naturally manufactured in the body, and if produced in sufficient quantity will also cause death in its own peculiar way. We have said this much about toxin as leading up to the antidote, antitoxin.

The toxin has been produced under conditions over which we have control, without recourse to nature's method of growing it in the animal body. We must now, as Houghton says, stand aside, and allow the remainder of the miracle to be wrought unseen, as no one has yet been able to produce antitoxin satisfactorily, except in the animal body.

The horse is selected as the most suitable animal on which the antitoxin shall be produced. He is quite susceptible to human infectious diseases, and has a large amount of blood from which the antitoxin-bearing serum may be obtained after it has been produced there, a course of treatment extending over months being required to saturate his blood, if I may be allowed the expression, with antitoxin. Small, gradually increasing doses of the *artificially* prepared toxin are

injected, either subcutaneously or into the veins. The greatest caution is required in regulating the dose, especially at first, or diphtheria paralysis will occur and prove rapidly fatal, and this though no germs of diphtheria have been introduced, but only their product, the toxin, a matter of great significance. When the dose is not sufficiently large to produce death, paralysis of the pharyngeal muscles will sometimes occur, and regurgitation of fluids take place, as in human beings after diphtheria.

It is found that each injection produces a decided reaction, the temperature rising from 1 to 3° F., falling to normal in three days, with a secondary rise in 24 hours, soon again becoming normal, when the injection may be repeated. The dose of toxin is gradually increased, and it is supposed that after the lapse of several months of weekly injections of many hundred times the amount of toxin which would have proved fatal at the commencement, that his blood must contain considerable quantities of the protecting agent, *anti*-toxin.

That it does contain it, as also its exact amount, is proven by treating guinea-pigs.

Thus when, under the greatest precautions, the serum of the immunized horse is drawn off, we have a product dissolved in that sterile serum, which should, if the theory be correct, counteract the toxin of the K.-L. bacillus. This substance, the much-desired antitoxin, has been poured out by nature in the toxinized horse, to overcome the deleterious action of the toxin upon his organism.

To determine its actual presence, as also its exact amount, an ingenious process is gone through. The guinea-pig is selected as the animal in which to prove the antitoxin, if I am using the word prove correctly, according to its meaning by our homœopathic brethren.

Ten times the minimum fatal dose of diphtheria poison is mixed with varying amounts of the antitoxin-bearing serum, and injected into guinea-pigs.

When the smallest amount of serum is found, which will protect these animals from the effects of 10 times the minimum fatal dose of diphtheria toxin, the therapeutic efficacy of the product is easily determined.

To illustrate—again following Dr. Houghton. Suppose a guinea-pig of 250 grains weight does not become sick when given subcutaneously, ten times the amount of the minimum fatal dose of diphtheria toxin, mixed with 1/5000 c.c. of the serum, containing the diphtheria antitoxin.

We say that each c.c. of the serum contains 500 antitoxin *units* following Behring's law that "each antitoxin unit is ten times the amount of anti-diphtheritic serum required to protect a guinea-pig, against ten times the lethal dose of diphtheria toxin, when the two are mixed together and injected subcutaneously."

Thus we see how by a comparatively simple, yet ingenious process, the serum is tested, not only for the presence of this wonderful product poured out by nature in the economy of the animal, to antidote the toxin or poison of the bacilli of diphtheria growing in his tissues, but also for the amount of it which is present, and which, as you have seen, is determined with almost mathematical exactness. As you will readily conceive, the serum varies greatly in strength, both from different horses, and at

different times in the same animal, so that it is necessary to test each sample drawn and put up in containers holding the proper number of units for a dose, irrespective of the amount of the fluid-serum in which it is dissolved, the dose varying from 250 units for immunizing purposes to 1,500 units for the most severe case of diphtheria. Here then we have, weighed and measured, as it were, this greatly-to-be-desired product. You see that it is not manufactured. Nature does it for us in the economy of the animal whose tissues have been stimulated by the toxine. It is asserted that antitoxin can be manufactured synthetically by the passage of a powerful electric current, but not of sufficient strength to be of use as a therapeutic agent. The fact, as Johns says, that a synthetic product is possible, is in itself an argument that antitoxin, as such, exists in nature.

Now, not to get too far away from our text, let us remember that serum therapy is really antitoxin therapy, and that we should have as many antitoxins as we have toxins; beneficent nature in the process of evolution having, no doubt, prepared for each lethal product its own proper antidote, and that we have as many toxines as we have specific diseases, that is, pathological processes due to specific germs. Now this is, to my mind, a most comfortable and comforting idea. It appeals to all that is rational in us. Nothing goes by chance in the universe. If an apple fall, or a Lincoln be shot, a land slide occur, or a planet burn out, it is the outcome of law—universal, everlasting, unchangeable, inexorable, and no doubt on the whole beneficent. We are too small, too finite, too cramped as to our environment to see the end of the working of this law. We are not yet able to generalize, we see the individual when disaster and affliction overtakes us either personally, as a community, as a nation, or as a world. Our powers of combination are too limited to look upon nature's doings with nature's eyes. In the application of that inexorable law of nature it matters not whether the individual be great (what a travesty upon nature for us to call any individual great) or small, the emperor or the peasant, the scientist or the yokel. The individual is apparently not considered. As someone has well put it:—

> "So careful of the type she seems,
> So careless of the single life."

I said the thought that each specific disease has its own toxin, and consequently its antitoxin is comfortable and comforting. It lifts our conception of disease out of the Cimmerian darkness of that of a few centuries, or even a few decades ago. But we are too recently heroes of scientific light to have gotten rid of the superstitious *in toto*.

The most advanced scientists of to-day live too near the age when witches were burned to be free from that "taint i' the blood," that savagery which caused some of the highest spirits in the Augustan age of English literature to carry about with them effigies, mannikins of their enemies, the pricking and stabbing of which with pins, did in their belief cause disease and death to come upon the originals of the effigies, though thousands of miles away. We live too near the age when the Iroquois devoured the raw bleeding heart of his victim, believing that

thereby he would incorporate into himself all the courage, and, perhaps, some of the ferocity of the slain one. We are too near to the time when macerated testicles were shown to have restored the virility of youth, its spring and elasticity to wrinkled age. But I had better pause, or I shall presently trench upon that new scientific ground—"internal secretion of ductless glands." Happily the testicles are not ductless, their secretion is not internal, so I have saved myself.

How can we hope to be free from the taint of superstition? From the medical superstition, rank, ignorant and intolerant of not the old time, but of recent times, when even I, a neophyte, can remember one who was then one of the brightest, most scientific and up-to-date medical teachers of Toronto laugh at the bacilli bugs as he called them, of pulmonary tuberculosis; and this, though he was a good microscopist, and knew pathology as it was then generally known.

I believe that most of us have gotten rid, so far as can be done by vigil and fasting, by prayer and self-command, of that horrible old man of the sea, medical superstition. That where our fathers saw the hand of God, we see drains—that we are becoming materialists as to disease. The spiritual theory thereof, the old-fashioned humors, the essences, the heaven-sent plague, no longer satisfy us; we have to-day locusts and toads, but they are microscopic.

I have said that, reasonably, we should have as many toxins as we have specific pathogenic organisms; and consequently as many antitoxins. This is probably true. Yet, though a stupendous amount of work has been done by skilled investigators, our results are not very reassuring. May we take it for granted that it is accepted by the profession that diphtheria is rendered less fatal by the timely and skilful use of its antitoxin? In my humble opinion, judging from necessarily limited experience with the remedy, as well as from the very abundant literature which has grown by leaps and bounds in the past year, the antitoxin of diphtheria has lowered the mortality of the disease.

It would be easy for me to read statistics to you for an hour, or show them galore, both private and public, from hospitals, boards of health, and other sources, but time presses.

Now let us remember that the subject is still in its swaddling clothes, that time enough has not elapsed to "prove all things," according to the scriptural injunction; that men are often led a dance after a will-o'-the-wisp, through their own imaginations and zeal; witness the specifics which are from time to time brought forward by earnest, hardworking and zealous men, striving after the truth, and betimes fondly imagining they have found it. Let us remember that statistics are frequently deadly instruments. The words of the old divine should be constantly in our minds, who said there are three kinds of falsehoods, to wit: lies, d—d lies, and statistics.

Yet, having all this in mind, I think we may be convinced that the mortality of diphtheria is lessened by the use of antitoxin. Virchow, who at first opposed the use of antitoxin, says: "All theoretical considerations must give way to the brute force of the figures, and I consider it the duty of every physician to use a remedy giving such clinical results." You have all seen figures relative to the subject.

Let me repeat here just a few. Dr. Biggs had information of 79,085 cases treated with antitoxin in different parts of the world, with a mortality of about 16%.

In cases treated without antitoxin the death rate was between 30 and 40%. In another series of cases, mentioned by Cheatham (D. & H. G.), 2,930 cases treated with a. t. gave a mortality of 14.9%; while of 3,625 cases treated without antitoxin, during the same time, or during intervals of forced interruption (owing to lack of antitoxin), 1,455 died, a mortality of 40%. I have scores of conclusions from all parts of the world, and while they differ more or less widely as to results, all collective investigation, the reports of all public institutions and health boards which I have, as well as those of most private individuals, agree in this, that the mortality is lessened by the use of antitoxin.

How account for the varying reports? Several factors enter into the production of this variance.

First, the time at which the injection is given. If a child has been ill two or three days, and the physician waits till a bacteriolo[illegible] report has been made, the loss of these hours may well mean a loss of life, and consequent variance in statistical results.

The report of the Am. Paediatric Soc. shows that early treatment is necessary. Thus the mortality in the grand total of 5,794 cases was 12.3%, while of 4,120 cases treated within the first three days the death rate was 7.3%, including every case reported, but if from these is deducted the cases which were moribund at the time of making the injection or died within 24 hours, the mortality was 4.8%, thus substantiating Behring's original claim that if cases were injected on the first or second days the mortality would not be more than 5%. Dillon Brown's recent report, as given before the last meeting of the Trin. Al. Assoc., shows conclusively that the number of deaths is lessened in laryngeal diphtheria since the use of antitoxin.

The quantity used will also make a difference in the results. My time will only permit me to say that the consensus of opinion of those who are best able to judge, as gathered from the literature of the subject, would seem to be that, on the whole, rather larger doses should be given than have been used. The lately introduced concentrated serum removes all objections as to the largeness of the dose of the medicine, for it must be confessed that the injection of so large a quantity of serum into a child is quite a heroic measure.

The quality of the product. You will easily understand that the quailty, or strength of the serum will vary greatly and thus cause variations in the conclusions arrived at. I believe that our own P., D. & Co. make as good and reliable a serum as is put upon the market in any part of the world.

In this connection let me give you Professor Abbott's, conclusions drawn from 19 samples of serum, foreign and American, bought in the open market in different cities of the U.S. The labels having been removed and numbers substituted, the professor examined them. He found that "the majority of the samples exhibited the average required strength. Four were unusually rich in protective substance, while in

three there was a relative deficiency of antitoxic properties. Some of the samples proved to be of unusual strength, while others were shown to be so poor in antitoxin as to demonstrate their comparative uselessness for therapeutic purposes. In some instances there was a great discrepancy in the actual strength and in the advertised strength. Certain of the samples from the same manufacturer, purchased in different markets, at the same and different dates, showed a wide variation; other samples retained their strength absolutely from three to twelve months, while some contained only about two-thirds of their original strength at the end of three or six months."

Considering then the time, the quantity administered, and the quality of the product, we can easily understand how reports differ as to results and thus apparently stultify statistics, honestly gathered. The main point is, let me repeat, that from all sides comes the assurance that the use of the product lessens the mortality. One word about the fatalities which have occurred and which probably makes us consider the possibility of such a case happening in our own experience.

From all the information I can gather on the subject there have been six deaths in over 1,600,000 injections and only one in which it could be proven without a doubt that it was due to the serum. True, in three of the cases death might not have occurred if the injection had not been made. This showing would not prevent any one using it, even had the whole six deaths been shown to have been directly due to it, or three times six. The sad part of it is that in some of these cases the injections were made for immunity.

It is true there have been arrayed against serum therapy, as exemplified in the antitoxin treatment of diphtheria, numerous writers, the most prominent among whom are Dr. Lennox Browne, of London, Eng, and Dr. Jos. Winters, of N. Y. city.

These names give an air of respectability to the camp of unbelievers, who mainly consist, I believe, of men whose ignorance of the subject, joined to their own prejudices, lead them to take strong partisan positions, and endeavor to hold them by scoffing, raillery and abuse, rather than by scientific argument. I have carefully read most of what has been advanced by this camp of anti-antitoxinists, and I may say that they have not shaken in any respect my belief in the efficacy of the antitoxin treatment of diphtheria, nor lessened my hope that in the fulness of time, most, if not all, germ diseases will be most successfully and scientifically treated by serum therapy.

Those critics attack bitterly, and sometimes ignorantly, the principles enunciated by scientific men, working for the love of truth and the benefit of mankind; but they give us nothing instead of the gods they would destroy. Prof. Soltman, quoting from a German poet, puts it:

> The best critics in the world are they,
> Who along with what they gainsay,
> Suggest another and a better way.

We should be, I think, conservative in medicine, and not easily or willingly give up old land-marks, remembering that we have not a monopoly of the wisdom of the medical world in our time; remembering also that

the value of clinical evidence is greater far than that of any amount of theorizing. This one thing may be said of serum therapy, that it was evolved in the laboratory, but that clinical evidence apparently endorses all that the theorists claimed for it.

Any one who has seen, as I have, a whole cast of the pharynx and tonsils curl up and separate, under the action of the serum injection, and the case rapidly proceed to convalescence, which, under the old plans of treatment, would have lasted days or a week and then often result fatally, cannot but believe that the new medication is a great advance on the old; that antitoxin, which some of us were inclined to be sceptical about, and make jokes and puns about, is an *esse*, one which science has evolved or, rather, utilized for the amelioration of the sufferings and preservation of life of the human race.

Now, seductive as is the subject, I must pass on to a rapid survey of the other more important serums which have been exploited. My review cannot be exhaustive; for much as I would like to deal fully with the subject, I fear your patience is already tried; and I hope Dr. McMahon and others who follow in the discussion may fill the breach I shall leave.

When we look over the field occupied by the other germ diseases, and contemplate the results that have been achieved, they are somewhat disappointing, looked at from the standpoint of what has been done in diphtheria. We cannot say that with the exception of tetanus and the bubo plague in the east, any other disease has been brought to bay by the antitoxin treatment.

It is true we have cases, few in number, of other diseases; scarlet fever, for instance, reported by such men as Marmorek, in which the anti streptococcic serum is said to have proved useful. Thus he reports from Oct. to Dec., 1895, 95 children treated with the serum, in doses of from 10 to 80 cc. according to the tensity of the case. He notes that the effect on the lymphatic enlargement was especially marked, 19 cases resolved without suppuration.

Four cases of double otitis were more promptly controlled by the serum injections.

The kidneys were re-established as to function by one or two doses, after albumen had shown on urine. False membrane and delirium rapidly disappeared, and the general condition was greatly improved. The only inconvenience noted was the appearance of fleeting erythema. Baginsky, in Berlin, reports on the treatment of 57 cases with serum supplied by Marmorek and Roux. The small supply of serum prevented his using the doses recommended by Marmorek, but the death-rate was 14.6%, while the average death-rate for 5 years before was 24.9%. He does not, however, attach any importance to these figures, as there are naturally great variations in the mortality in this disease. His only conclusions were that, at least, the injections did no harm.—*McClintock Jour. Am. Med. Association.*

These cases are too few from which to draw conclusions, but the eminent author believes the remedy will render real service in the treatment of scarlet fever.—*La Clinique; Arch. of Pœdiatrics.*

The harmful effects of streptococci in various diseases, which have, besides their own specific germ, as in measles, diphtheria, scarlet fever,

broncho-pneumonia; also the fact that puerperal fever, erysipelas and a goodly number of the septicæmias, are said to be due to them alone, led observers to hope that when an antistreptococcic serum was obtained, we should have the same beneficent results flowing from its exhibition in the above named diseases, as have been seen in the antitoxin treatment of diphtheria. So far, however, with the exception of the above-mentioned cases reported by Marmorek and Baginsky, I have not seen, nor have I been able to find any satisfactory report as to their use.

There are many species of these cocci, and it has been found that the antitoxin of any one of them is antitoxic to the whole group of streptococci.

There has been done, and is still being done, a vast amount of work with this serum, commensurate, we should hope, with its vast importance. The New York Board of Health is having it carefully studied in the Willard Parker Hospital, and the great reputation and well-known ability of the scientific corps of this board and of the gentlemen composing the staff of the hospital is a sufficient guarantee that the work will be well done. The profession of this country owes much to Drs. Biggs, Park and Prudden.

Another serum of which we have all heard much, and from which we hoped much, was, or is, Coley's erysipelas serum for malignant tumors. Competent observers had noted improvement and even cure in malignant tumors after an intercurrent attack of erysipelas. The inoculation of erysipelas upon the region of the tumor was tried, but was inexpedient on account of fatal results arising from the erysipelas, though the results as to the tumors were very promising.

In 1894, Coley attempted to avoid the result of erysipelas by using the toxins of the germ. This gave good results, and he reported a number of cures. Later he used a mixture of the toxins of erysipelas and prodigiosus with better results.

His conclusions were:

(*a*) The curative action of erysipelas upon malignant tumors is an established fact.

(*b*) This action is much more powerful in sarcoma than in carcinoma.

(*c*) This action is chiefly due to the toxins of erysipelas streptococcus, which may be isolated and used with safety.

(*d*) This action is greatly increased by the addition of the toxins of the bacillus prodigiosus.

These conclusions, I may say, have not been borne out by experience, though a good number of medical men have faith in the curative action of the toxin in such cases.

Two cases of inoperable sarcoma have been treated by me with the mixed serum. In neither was a cure effected. The best I could say in regard to them is that they apparently prolonged life in one case, I should judge, about three months, and in the other, four months. Whether this be correct or not is, of course, more or less speculative. At any rate, the intense discomfort suffered by the patient in the matter of increased pain, severe rigors, increased temperature due to the reaction of the serum was very considerable. I don't think I should now employ

the serum if I had a case of inoperable sarcoma even, unless it was strongly wished by the patient or friends after the case had been set forth to them.

Emmerich and Scholl and Sta hold that they are curative, but they have proved useless on so many cases that few clinicians support them.

In the bubo plague Yersin has been eminently successful with the serum therapy. In his report in the *Annales d'Institut Pasteur*, Jan., 1897, *Columbus Med. Jour.*, Mar., '97, we have, based on the results of the treatment of the plague at Amoy, China, the following *resume:*

Six patients were in the first day of the disease; cure was obtained in all cases in from twelve to twenty-four hours, without suppuration of the bubo by the injection of 20 c.c. of the serum. Six were in the second day of the disease. The recovery was slower, and to obtain it I had to inject from 30 to 50 c c. of serum. It was complete in three or four days without suppuration of the bubo. Four were in the third day. The fever persisted one or two days after the injections. The recovery was slower, and the buboes suppurated in two cases; 40 to 60 c.c. of serum were injected. Three were in the third day. They recovered in five or six days. One bubo suppurated; serum injected from 20 to 50 c.c. Four were in the fifth day. Two are dead whose state was desperate at the time of treatment. Two recovered; serum used, 60 to 90 c.c. These twenty-three patients comprise six boys, three girls, eight men, four women, one old man, one old woman. To the present twenty-six patients have been treated by the serum, three at Canton, twenty-three at Amoy. They have furnished two deaths, a mortality of 7.6 per cent. Twenty-six cases is surely few to prove a remedy is specific and efficacious. I confess it readily and am the first to declare new experiments are necessary; but if one considers that the plague is the most deadly of human maladies, we shall be convinced that our twenty-six cases have a singular value.

All who have observed the plague estimate that it causes a mortality of not less than 80 per cent., and as most of the patients which I treated showed most of the alarming symptoms, there is no reason to fear that the results obtained may be contradicted in the end. Generally the plague does not last long. Death comes frequently in three or four days. It is therefore necessary to interfere at once. It is the easier to cure the sooner the serum is injected.

The foregoing is very encouraging. It emphasizes the common-sense idea that we should not wait until our patients are moribund before we use our serum; clinical evidence of a disease being sufficient to warrant our proceeding while waiting for bacteriological confirmation of our diagnosis. I wish I could report as great success on the treatment of diseases we have to grapple with nearer home, such as typhoid, tuberculosis, smallpox and cholera.

I have seen quite a few isolated reports, scattered here and there through various medical journals, bearing upon the results obtained in these diseases. But they are not reassuring, even if they were large enough in number to enable conclusions to be drawn.

As to typhoid, animals have been immunized and a protective action

can be demonstrated; but clinically the results are not convincing (McClintock). Haffkens has been working with this disease.

This principle holds good in cholera, as is shown by the results, and we may hope similar good results will soon be shown to follow in the plague. Yersin's serum is prophylactic, but the protection is quite limited as to duration.

Each method, then, has its advantages: Haffkens' as to prevention, and Yersin's as to the cure of the disease. Haffkens' method is evidently unsuitable for the cure of the disease, as injecting the germs would be but adding fuel to the fire.

I shall have to simply enumerate some of the other diseases in which work is being done in this direction, as I fear I have already trespassed upon your patience.

Tuberculosis, about which Dr. McMahon has some useful and interesting matter to present to you; cholera, with which I hope we may not have any experience; pneumonia, rabies, snake venom, syphilis, smallpox—all these are being studied by men well qualified to deal with them, and with a zeal and unity of purpose which augurs well for the ultimate result. When we consider that in point of fact, as well as in time, this new therapy is in its merest infancy, and that its study is being conducted on the strictest lines known to the most advanced scientists of to-day, should not our hearts beat high, should we not be sanguine as to the final result?

I believe that the imagination of even the most sanguine amongst us to-day could not shadow forth the victories of this new line of thought and research. Surely when we are scientifically certain of the cause of disease, when this cause can be weighed and measured, cultivated, increased or lessened in strength, at the will of the investigator, time and patience must surely bring to us the means of destroying it in the animal body.

In my opinion, no other body of men are so truly doing the will of the Almighty as are these self-sacrificing men who by daily and nightly toil are striving to unravel these mysteries, and to apply this knowledge to the amelioration of the suffering primarily of the human race, and incidentally of the lower animals.

Surely such zeal in so worthy a cause shall have its reward

THE REMOVAL OF DISEASED OVARIES, TUBES, &c., BY ENUCLEATION, WITH LIGATION OF VESSELS ONLY.—FORCEPS AS TEMPORARY HÆMOSTATICS, LEVERS AND TRACTORS, AN ADDITION TO THE ENUCLEATION METHOD.

BY J. COPLIN STINSON, M.D., C.M., SAN FRANCISCO, CAL.

In deciding on an operation for the removal of an ovarian tumor, pyosalpynx, &c., we should use a method which is simple, safe, scientific and will not be followed by any untoward symptoms. Such a method we have in enucleation with ligation of vessels only. This method is, in most cases, a comparatively simple procedure. At times it is difficult, *e.g.*, when the pedicles are short, deeply located in the pelvis and thus cannot be easily controlled, when the broad ligaments retract quickly, when the surgeon cannot or does not wish to keep close to the cyst or tumor, &c., when the broad ligaments are thickened and very vascular, when the uterus, &c. are fixed by periuterine or other adhesions and in most operations for the removal of the uterus either vaginal, abdominal or combined vagino-abdominal hysterectomy. Under these circumstances one should first enucleate the mass as far as possible so as to expose the pedicle which is then clamped and cut off between the mass to be removed and the clamps. By drawing moderately on the clamps, using the latter as levers and tractors, the severed pedicle is brought to the surface, inspected for open mouths of vessels which are ligated, separated with fine catgut. In such cases the forceps are an addition to the enucleation method. It is the common experience among operators that after the removal of an irreparably diseased appendage or appendages that the patients are not cured of their symptoms. I believe that the continuance of the symptoms in most of such cases is due to the universal custom of ligating the pedicles of the ovary, tube or broad ligaments with mass ligatures. The pedicle should not be tied with a mass ligature, or transfixed or tied in sections, for while these ligatures do control the vascular supply of the structures that have been removed, they also interfere with the physiological actions, relations and uses of the other structures which make up the pedicle. Enucleation with ligation of vessels only, does away with mass non-absorbable, dead and wandering ligatures, sloughing, painful and adherent stumps, pelvic exudates, the cautery, and secondary adhesions, &c., any of which cause a continuance of the symptoms after the diseased structure has been removed. In earlier papers (*N. Y. Medical Record*, July 20th, 1895, *The Therapeutic Gazette*, May, 1896, Transactions of the San Francisco County Medical Society, Dec. 6, 1896), I described and reported cases in which I had used successfully the enucleation method.

Two principles are involved in the satisfactory performance of enucleation. The first is to dissect as close as possible to the mass to be removed; bleeding is thus reduced to the minimum as one divides only arterioles or capillaries, which stop oozing almost at once. The second is

to keep the immediate dissection well in view and if any vessel is divided, catch it at once with forceps and ligate with fine catgut.

The technique of enucleation is best described by citing a couple of my cases.

CASE I.—Endometritis, tubo-ovarian abscess and ovarian cystoma with adhesions—operation under chloroform administered by the drop method. The patient was first placed in the lithotomy position, cervix dilated, uterus curetted, carbolic acid and iodine, 1 in 4, applied to the interior of the uterus, cervix again dilated, and the uterus irrigated freely with boiled water. The legs were then extended and an incision, about three inches long, was made above the pubes, dividing, slightly to one side of the median line, the skin, subcutaneous tissues, the fascia, the rectus and the peritoneum. On introducing the fingers the omentum and intestines were found adherent to the appendages and the fundus uteri. On account of the extent of the adhesions and the size of the masses, it was found necessary to enlarge the incision slightly. The entire length of the incision was now three inches and three-quarters. The fundus uteri could not be felt, so the adhesions on the left side were separated with the fingers till the mass on this side could be partially felt. During the separation of adhesions the mass ruptured and about one-half a pint of creamy, chocolate-colored fluid escaped. Pitcherful after pitcherful of hot water was poured in till the fluid came away clear. Carefully working toward the uterus, separating the adhesions, after awhile the fundus was exposed. The left mass was enucleated; beginning at its outer extremity, the blunt dissection, aided at times by cuts with the scalpel, was carried as close as possible to the mass (a tubo-ovarian abscess). The enucleation was carried as far inward as the uterus, from which the mass was removed by dissection flush with the uterus. The pedicle was not tied but was removed by enucleation without ligature, clamp or cautery. There was no bleeding, so no ligature or clamp was applied. The adhesions behind the uterus were separated, except deep down in the pelvis. The right tube and ovary were next sought for. The ovary was found buried in adhesion. The tube was apparently normal. The ovary which contained cyst, the size of a mandarin, was separated from the adhesions and the surroundings, and, with the tube, was enucleated by blunt dissection aided at times by cuts with the scalpel. When the uterine end of the tube was reached, the serosa of the tube, about one-quarter of an inch from the uterine cornua, was divided in a circle and dissected back to the uterus. The tube was then cut off at the tubo-uterine junction and the cut edges of the serosa, which had been dissected back, were united by a continuous catgut suture. The oozing from the adhesions was arrested by hot water and sponge pressure. A couple of tares on the uterine fundus were closed with continuous catgut sutures. Two narrow gauze wicks were carried down into the cul-de-sae, and the ends brought out through the lower angle of the incision. The omentum was drawn down and spread over the intestines. The cut edges of the peritoneum were united with a continuous fine chromicized catgut suture; the divided edges of the rectus and the fascia by a continuous chromicized tendon suture. For the nice approximation of the fascia, a layer of

chromicized catgut sutures was also introduced. The skin edges were sutured with fine silk, only sufficient room was left at the lower angle of the incision for the passage of the gauze wicks. The uterus was not removed as it was in good position and had been curetted. The patient made a satisfactory recovery. The wound healed by primary union, highest temperature 101 rectal. The small drainage wound was healed three weeks after the operation. At last report, Jan. 15, 1897, was in splendid health, complained only at times of slight pains in the pelvis when the bowels were constipated.

CASE II.—FIBROID OF THE OVARY.—Operation under chloroform, administered by the drop method. The patient was placed in the dorsal position with the legs extended. A median incision was made above the pubes, extending within about four inches of the ensiform cartilage. On opening the peritoneum some adhesions were found; these were separated. The tumor, which weighed about fourteen pounds, was brought well to the surface. The pedicle, which was short, but broad, was clamped transversely close to the tumor with four or five long hysterectomy forceps, and then severed between the tumor and the clamps. Drawing moderately on the forceps, using the latter as levers and tractors, the severed pedicle was brought to the surface, the cut surface inspected and open mouths of vessels ligated separately with fine catgut, then the clamps were removed, first applying small forceps at the upper and lower angles of the pedicle. The cut edges of the serous coat of the pedicle were united with a continuous fine catgut suture, so that there would be no raw surfaces left to form adhesions. The tube was normal and was not removed. The other tube and ovary were examined and were found normal. The cut edges of the peritoneum were united with a continuous catgut suture. The fascia, with a chromicized tendon suture, and the skin edges also united without drainage. The patient made a satisfactory recovery, and was up and around three weeks after the operation. At last report, Jan. 1, 1897, was in splendid health; menstruation regular; no pelvic symptoms.

The writer has successfully removed ovarian tumors, cysts and abscesses, adherent ovaries and tubes, etc, by enucleation, ligating the vessels only. In two instances the appendages were removed by enucleation without ligature, clamp or cautery. No vessel was ligated as there was no bleeding. The enucleation operation is advocated for the removal of all such masses as ovarian cysts, tumors, etc., irreparably damaged tubes, *e.g.* pyosalpynx, etc., tubes, the seat of ectopic gestation, etc., as the safest, simplest, most scientific and æsthetic method of dealing with such masses. From a study of many cases treated by the several methods of operation, I can only draw the following conclusions:—

1. That an irreparably damaged tube ovary, etc., should be removed by enucleation with ligation of vessels only; using only absorbable ligatures.

2. That enucleation is the simplest, safest, most scientific and æsthetic method of removing an ovarian cyst tumor, etc., of the ovary, the tube, the uterus, etc. There is no danger of hemorrhage; if a vessel is severed it can be caught at once and ligated.

3. That the ligation of vessels only does away with the tying off in sections, the tying and transfixing of pedicles, mass, non-absorbable, dead and wandering ligatures, sloughing and painful stumps, pelvic exudates, adhesions, and the cautery, etc.

4. That, as no untoward symptoms follow the enucleation method, there is no secondary operation necessary.

5. That with enucleation there is little or no danger of injuring adjacent viscera; recovery is rapid, and the danger of sepsis is reduced to the minimum.

6. That when a fallopian tube is removed, it should be completely; no stumps should be left. When the serosa of the tube at the tubo-uterine junction is not totally destroyed, it should be divided in a circle about one-quarter of an inch from the uterine coruna, dissected back to the uterus, and after the removal of the tube, the cut edges united by a continuous fine catgut suture.

7. That in removing an appendage, etc., by enucleation the cut edges of the brood ligament should be united by a continuous absorbable suture.

8. That even when both appendages are removed, a uterus that is in good position, and not irreparably diseased, should not be removed.

9. That it must not be forgotten that at times enucleation is difficult. Under such circumstances the surgeon should first separate the adhesions, then enucleate the mass so as to expose the pedicle which is clamped with long forceps, and then cut across between the mass to be removed and the clamps. The forceps are used as temporary hæmostatic clamps, levers and tractors, while the vessels are ligated separately with fine catgut, and are thus an addition to the enucleation method.

THE ADMINISTRATION OF ENEMATA OF BLOOD IN TUBERCULOSIS.—Dr. Whittaker has found marked increase in weight and gain in nutrition to follow their repeated use. To each quart of blood he adds half an ounce of bicarbonate of soda and sugar of milk and one grain of common salt. Two pints of a mixture consisting of equal parts of water and such blood are thrown high up the rectum. Bullock's blood was at one time, we believe, a favorite remedy in Paris, where patients used to visit the abattoirs in order to get it freshly drawn.—*The Practitioner.*

A NOVEL TREATMENT FOR ASTHMA, consisting of injections of antidiphtheritic serum, has been tried by L. Revilliod. The remedy was used because it is excreted by the respiratory tract, as shown by its effect in loosening the false membranes in diphtheria. This reason seems somewhat far-fetched. Seven cases were treated; three being cured, one permanently relieved, and three temporarily relieved. The injections, which each amounted to 10 c.cm., and numbered from three to ten, were given at considerable intervals, usually when an attack threatened. Under this treatment the attacks became less severe and occurred at greater intervals. We think it right to record this treatment, but we would not feel justified in employing it ourselves.—*Rev. Méd. de la Suisse Rom. Practitioner.*

THE TREATMENT OF SEPTICEMIA BY BLOOD LETTING AND INFUSION OF SALT SOLUTION, WITH REPORT OF A CASE.

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I am under obligations to Dr. Halsted for the privilege of reporting this case, which occurred in his practice.

Riggin Buckler, aged fifteen; seen first June 30th, 1898, at Blue Ridge Summit. Complaint, abdominal pain in the hypogastric region; family history, negative.

Past history: Suffered the usual diseases of childhood. Was always a delicate child.

Appendix history: Since early childhood patient has had occasional attacks of indigestion, intestinal disturbance, associated with more or less severe abdominal pain. Dr. Lockwood saw him frequently during these attacks, generally put him to bed and administered calomel, and the boy would be well in a day or two. It is probable that all of these attacks were mild inflammations of the appendix.

Present attack was of five days' duration, and began June 25th, just as all previous ones had, and at first seemed to respond to the usual remedies, so much so that his temperature fell from 103° on June 27th to 101° next day. On July 29th patient said he felt better, and his temperature was only 100°, but during the night he became slightly delirious and nausea and vomiting were frequent. Dr. Halsted was then summoned.

Day of operation, June 30th, 8.30 a.m. Patient rational; abdomen distended. Tenderness over sigmoid and hypogastric region. No tenderness in the iliac fossa, but a soft, boggy mass felt in the pelvis. Diagnosis of probable appendiceal abscess made, though the symptoms and location of abscess were rather unusual.

Operation: Dr. Halsted operated, assisted by Drs. Lockwood, Van Ness, H. L. Smith Buckler, and the writer. Ether was used. Laparotomy incision through the right rectus nine inches long. A slightly turbid fluid in the general abdominal cavity was found; intestines hyperemic, peritoneal gloss slightly impaired; evident early general peritonitis; mass in the pelvis surrounded by adherent intestines; not adherent to anterior abdominal wall. After breaking through these a large abscess was found, in which lay a very large necrotic appendix, which was perforated at its base. Pus was evacuated, appendix ligated and excised, cavity packed with gauze, which was brought out at the lower angle of the wound, remainder being closed with a continuous silk peritoneal suture, a silver mattress muscle suture and a silver subcutaneous suture.

After the operation Dr. Halsted returned to Baltimore, leaving the writer to look after the case. The patient was in good condition, pulse 92. Towards evening the temperature rose slowly, being 101.4° at 5.30, 102.4° at 10 and 103° at 3 a.m. In the meantime the pulse had become

more rapid, reaching 118. Patient was then restless, constantly vomiting small amounts of fluid; the abdomen was distended, tense, but no muscle spasm nor tenderness; pelvic pack draining profusely. During the early morning the temperature fell, but the pulse grew steadily worse, and at noon, July 1st, was 146, temperature 104°, respiration only 28. The abdomen was soft, flat, not tender; evidently no peritonitis present. Strychnia was given hypodermically in doses of 1-60 grain every hour, but had no effect on the pulse, which reached 170. At 4.30 a nutrient enema was given, and at 4.45 700c.c. salt solution was injected under the right breast. The patient continued very thirsty and vomited incessantly. To relieve this the stomach was thoroughly washed out through a tube, with good effect.

At 7 p.m. (July 1st) the boy was rapidly getting weaker; temperature 105.8°, pulse 156, but no signs of general peritonitis were present, and it became evident that the condition was one of general septicemia, and I realized that drastic measures were necessary, and decided to try the effect of venesection and transfusion to wash out the poison in the blood.

Accordingly at 7 p.m., under cocaine, I exposed the right basilic vein, inserted a large aspirator needle and allowed the blood to flow out, but the blood pressure was very weak and we could only obtain about two and one-half ounces. We then began to inject normal salt solution, which had been hastily prepared, using for this purpose a large aspirator; 1300 c.c. (one and one-half quarts) were injected slowly, about one hour being consumed in the operation. During the transfusion the pulse steadily improved and at the end had fallen from 160 to 130, and the volume which was previously almost imperceptible became fairly strong. His temperature fell from 105.8° to 104°, and his general condition was much bettered.

This improvement was very decided for an hour or two after the transfusion; the nausea ceased and he slept a short while, but very soon the pulse began to get more rapid, and at 3 a.m. (July 2nd), was 146 and quite weak in volume; the patient was restless and slightly delirious; the temperature 104°.

It was very evident that the transfusion, while very beneficial, had not been sufficient, although he had received two quarts of fluid (700 c.c. subcutaneously and 1300 c.c. intravenously). Preparations were then made for another transfusion, and at 6.45 a.m. it was begun. 2500 c.c. (two and one-half quarts) of salt solution were used this time and had the effect of apparently completely washing out the blood infection. Temperature and pulse both dropped almost to normal, and after that there was never any great concern about the boy's welfare.

The following special chart, which includes the period of the first submammary and intravenous infusions, shows very graphically the effect of each, especially the last transfusion:

Time.	Amt. of salt solution infused.	Pulse.	Temperature.	REMARKS.
June 30				
a.m.				
10.25		113	100⁴	operation—appendectomy—evacuation large abscess.
11.25		92		operation ended—patient in good condition.
p.m.				
5.30		88	101⁴	doing well.
11.00		104	102	very restless.
July 1				
a.m.				
3.00		118	103	vomiting—abdomen soft, not tender.
noon		146	104	cold sponge—pulse much weaker.
p.m.				
1 30		164		strychnia gr. 1-60 every hour.
4.30		170	105	pulse very weak patient very restless—condition rapidly getting worse.
4.45	700c.c.			*infusion beneath right breast* } *pints salt solution.*
5.00	120			120 c.c. salt enema retained.
5.45		156	105⁸	pulse improved by infusion, but fever gradually increasing.
6.30		160	105⁸	condition of patient becoming rapidly worse—pulse very weak.
7.00				operation—exposure of basilic vein; removal of 2½ ounces of blood—*intravenous—infusion* 1,000 c.c. (1½ quarts) *of salt solution.*
7.10		156	105⁸	infusion begun.
7.30	600c.c.	148		pulse improving in strength.
8.00	1300c.c.	130	104	pulse full and strong—general condition of patient remarkably improved.
July 2				
a.m.				
1.00		130	104	condition of patient greatly improved since infusion.
2.45		146	104	pulse becoming weaker again—temp. not rising.
4.30		146	103⁸	pulse very weak—patient restless, delirious—preparations made for second intravenous infusion.
6.45		146	103⁸	left basilic vein opened—infusion begun.
6.55	200c.c.	120		pulse slower, but weak.
7.02	600	120		pulse much stronger.
7.08	1000	120	103⁸	
7.17	1500	116		patient much stronger and now perfectly rational.
7.28	2100	112		patient says he feels "full" all over.
8.10	2500	108	102	pulse very full and strong—general condition greatly improved—complains of "fullness" all over body, 2500 c.c. (2½ quarts) have been introduced—infusion stopped.
9.00				patient has been very quiet since infusion—now sleeping.
9.30				infusions have had a marked diuretic effect, 25 ounces voided in past 12 hours.
11.30		100		
12.00		104	101⁸	sleeping soundly.
p.m.				
10.00		98	101⁸	condition fine.
July 3				
a.m.				
6.00		84	101⁸	pulse strong—general condition good.
				NOTE—Subsequent convalescence uneventful.

On July 2 Dr. Halsted returned and removed the skin stitch. It was then found that the infection had travelled up the abdominal incision, and had been so virulent as to cause a slough of the edges of the rectus muscle for five or six inches. This was followed several days later by a wide separation of the edges of abdominal wound, and the thin layer of peritoneum, which had fortunately been sutured separately from the muscle, alone prevented evisceration.

The subsequent convalescence was tedious, but uneventful, the abdominal pack being gradually removed from the sinus finally closing.

CONCLUSIONS.

This case, which has been recited at considerable length, is a striking example of the wonderful therapeutic possibilities of saline infusions.

Of late evidence has been rapidly accumulating showing their great value in acute anemia, uremia, eclampsia, coma, post-operative shock, etc.

In cases of toxemia the rational treatment is certainly to remove by venesection as much of the toxic blood as possible, and replace it by a normal salt solution. One vein may be used for both purposes, or one may be bled while one on the opposite arm is infused.

This simultaneous depletion and infusion makes it possible to withdraw much more of the poisoned blood without fear of shock.

As exemplified by this case, very large amounts of fluid may be necessary before the toxic agent is neutralized or washed out. The first 700 c.c. which was injected beneath the breast reduced the pulse from 170 to 156; but it had no effect on the temperature, which even continued to rise, and the pulse soon became weak again. The next infusion (intravenous) of 1300 c.c. reduced the pulse from 156 to 130, and the temperature from 105° to 104°, but here, again, both soon began to rise, and it was only after the last intravenous infusion of 2500 c.c. both fell never to rise again.

An interesting question is, "How much dilution can the blood stand?"

Taking the common estimate, the adult man has between 4000 and 4500 c.c. of blood in his body. Our patient, a delicate boy of fifteen years, probably had very much less, yet he received 4500 c.c. additional fluid into his vascular system without any bad effect.

It would, therefore, seem proper and justifiable in a case of septicemia in the adult to infuse 7000 c.c. or more of salt solution. I feel sure no harm would be caused if it were injected slowly, and at two or more sittings.

It is certain that small amounts—a quart or so—will be utterly useless in many cases. The curative effect is probably due both to the dilution of the poison and its rapid elimination by the excretory organs, brought about by the high artificial vascular tension. (The diuretic effect of infusions is very marked.)

Method of Infusion.—The subcutaneous and submammary methods are probably adequate for cases that are not urgent, but for others the direct infusion into a blood-vessel is certainly much more certain and immediate in its results. The intravenous method, which was most successful in this case, is not without danger on account of the possibility of air and foreign body emboli, and a few cases of death from such causes have been reported. This led Dr. Halsted, in 1884, to advocate centripetal arterial transfusion as being devoid of all danger. The radial artery, Dr. Halsted thinks, can be more easily exposed than a superficial vein in many cases, this being especially true with fat subjects.

All toxic conditions would seem to come within the province of the depletory venesection and saline infusion, not alone the surgical septicemias, but the toxic states of typhoid, pneumonia, diphtheria and malaria, and there is no reason why the procedure should not be repeated as many times as is necessary to combat the blood infection.

In a case of severe malarial coma last summer Dr. Schenck, at my instance, removed thirty ounces of blood, and followed it by an infusion of nearly two quarts of salt solution, with very good effect. The loss of healthy corpuscles is more than compensated for by the removal of parasites, toxines and dead corpuscles.—*Maryland Medical Journal.*

CONGENITAL DISLOCATION OF THE HIP.

Congenital luxations are mostly traumatic. They are found in infants well formed, vigorous and of good constitution, and are rarely found associated with other malformation. It occurs at the moment of birth, or sometimes it occurs within the uterus. The displacement of the femoral head may be found also with arrest of development and multiple malformation; they are also seen in anencephalous cases.

Congenital displacements other than those of the head are very rare.

Any obstacle to delivery, such as malformation of the pelvis or a faulty position of the child or of the head or the child being unusually large, may be the cause of luxation, through the efforts made by the accoucheur.

The hand of the accoucheur, the crochet or the finger placed in the fold of the groin to aid the expulsion may result in dislocation; at the same time the noise of the slipping may be heard.

In pelvic presentations, the thighs being flexed upon the abdomen, the head of the femur is pressed to the posterior and inferior part of the capsule and consequently in that position the application of a minimum of force causing traction downward, is sufficient to displace the head and to carry it beyond the border. Extension of the limb during delivery now completes the displacement, and it is only required that the weight in standing shall be put upon the feet, or that an effort shall be made to walk to cause the head of the femur to be carried up to the external iliac fossa. Shortening of the leg results as the head is carried higher on the ilium and the degree of infirmity is increased. Thus is produced the peculiar rocking and waddling which is characteristic of this luxation. When it exists only on one side the gait is less peculiar and characteristic.

Some think that the dislocation is not truly congenital and hold that it occurs not at birth, but when the child attempts to walk. If the infant falls they think that the luxation is caused thereby, but it does not result in that manner and parents seek to relieve the results of the fall, forgetting that the infant was always more or less lame.

When I published my work on this subject I had seen two cases of congenital luxation with Dr. Tyler Smith. One was a little boy of fifteen months, having a luxation of the left hip, and the other a little girl aged five months, presenting also luxation on the left side. The boy was a well-developed child, and the little girl had a large head. There were no other malformation in these children. In both cases the accouchement had been very long. In the one because of pelvic presentation, and in the other because of the size of the head. In both patients the reduction of the dislocation was easy and did not occur again. It has been proved that children in whom this luxation is found, are often noticeably large. This fact was especially seen in two boys at St. George's Hospital. I had these children admitted to my service, and they both had double congenital luxation of the hips. The one, aged 12 years, was a strong boy, apparently of 14, and the second, aged 14 years, looked like a youth of 16 or 17. These appearances were so decidedly marked that some doubt arose as to the question of age, and

special inquiry was made to verify the facts. In the cases reported by Holmes and cited by me in which there existed a luxation of the right hip, the head of the child was very large; likewise in a case on whom I operated with Dr. De la Cour, and in whom there was a luxation of both hips, the head was enormously large.

In the second series of cases those which occurred during intra-uterine life, I have noticed several cases resulting from accident or a blow; contraction was produced and there followed a luxation or fracture.

Cruveilhier has given a figure of a child, well developed, presenting a luxation of both femurs, having also club-foot and club-hands, and the cotyloid cavities presenting normal development.

In hydrocephalic or anencephalous infants there have been found all all forms of luxations and sub-luxations and muscular contractions of all kinds.

Grawitz reports that in all the cases which he had examined he found not only luxation of the hip, but also club-foot, club-hand, scolicis, visceral ectopia, spina-bifida and other malformations. In this third series the child cannot live.

But in the pathological museums, luxations producing themselves either in the uterus or at the moment of birth, exist alone, or complicated with fractures along with malformations or monstrosities, and the development is either complete or imperfect and irregular, all are arranged as if they were dependent upon one cause; and thus confusion and error is accounted for.

Many of the deformities are wrongly considered as luxations; they are malformations; and some of the cases catalogued in the pathological museums as pathological luxations have nothing in common with this class of affection, but they are the result of morbid processes, especially of arthritis either in the infant or the adult.

In acute arthritis the articulation may be completely disorganized, and the bony tissue, the head and the neck of the femur, may be completely destroyed. In the infant, inflammation of the hip shows itself about one or two months after birth, following a traumatism which occurred at the moment of delivery. The soft parts which surround the joint are at first affected, and soon the epiphysis becomes inflamed and the articulation fills with pus. The head of the femur may then become displaced or entirely destroyed, and deformity results. The head may be hollowed out or flattened, or there may remain simply a stump; such a condition usually results fatally; the results have sometimes been described as congenital luxations.

Likewise, the neck of the femur is so much altered in rickets that instead of the general angle, it forms a right angle with the body and the great trochanter is carried above Nelaton's line. It is not surprising that this condition should often be considered congenital luxation. I saw a case of this nature in consultation. The young girl was four years old, short and stout with considerable lordisis, and the trochanters were much above Nelaton's line. At the same time, the general appearance and gait inclined one to consider the case a congenital hip dislocation, but the femurs were much curved outward and other signs of rickets

were found. The evidence was complete that the situation of the trochanter resulted from rickets rather than from luxation.

One might think, possibly, that the diagnosis of congenital dislocation of the hip is an easy matter. The truth is that it is frequently overlooked.

I saw in consultation a child aged seven, a typical case of congenital hip dislocation; nothing more characteristic could be desired for a case of this kind; the head of the femur was visible in the iliac fossa, the lordisis was strongly marked, there was double flat-foot, the lower extremities were short; the position in standing and the gait were characteristic. My diagnosis, however, not being satisfactory, another consultation was demanded. Sir Wm. Ferguson was asked to join us and we met at Cambridge Terrace the following day. The child was undressed and made to walk about the room. Sir William watched carefully the movements and quietly remarked: "Well, what have we?" Then after examination with care, he said, "Truly, I venture to say that I have never seen a case of this kind."

This child had been considered for two years one of hip disease.

Some weeks after this consultation Mr. Prescott Hewett asked me to see with him a child in Princess Gardens. On arriving, I found the little patient undressed, going up and down the stairway, the parents and Mr. Hewett viewing the movements of the child from behind. She was a little girl of nine years, very fair, large and well-formed. She was, as they informed me, always lame and unable to place her heels on the ground in walking; but she never suffered. From the time when she commenced to walk she had been lame, but her disability had considerably increased during the last year.

It was a case of congenital dislocation of the left hip.

I mention these cases because they were not recognized by two of the most eminent surgeons of the day, and I give their names in order to emphasize the fact that these luxations are commonly overlooked, or not recognized, in nearly all cases.

Further, I wish to point out that the causes producing these luxations are multiple, and that the conditions of the femoral head and that of the acetabulum vary according to the time when the dislocation was produced, and since there are different kinds of congenital displacements of the hip, the treatment ought to vary. For example, when the infant is well developed and theae are no other malformations, the reduction of the luxation can be effected about the second year after birth and this period may be extended to the third or even the fourth year, when they have not been permitted to exercise. Not only can the head of the femur be easily reduced, but it will probably remain in the acetabulum, but after this period the cotyloid cavity fills up, more or less, with fat or with fat and fibrous tissue and the trochanteric muscles commence to retract: so that even if one could bring the femoral head low enough, difficulty would still exist in retaining it in place.

The femoral head in cases of this kind is usually of normal dimensions and covered with cartilage. It remains intact or slightly altered in form up to the age of from 6 to 12 years and even much later. In the case of Mr. Canton the changes were but slightly marked at the age of 22 years;

likewise the cotyloid cavity may preserve its depth, but it will probably be filled with fatty tissue. It is to be observed that in a case where dislocation is produced at the moment of birth, when, on the contrary, the dislocation occurs within the uterus, the acetabulum may be incompletely developed as in the case mentioned by Grawitz in which the cotyloid cavity was not further developed than in a fœtus of the fifth month.

It is important to determine with exactness the time during which the cotyloid cavity can preserve its depth and cartilage and the head of the femur its normal dimensions. In this connection I recall the remarks made by Fournier upon a boy of 16 years who was presented by him to the Anatomical Society, of which at that time Professor Cruveilhier was President.

"The cotyloid cavity," said Fournier, "retains its form except that the external lip is slightly flattened; it preserves also its depth and cartilage. This cavity contains a certain quantity of fat, which fills it almost completely." The new cavity was formed for the head of the femur, and the head itself was slightly flattened, but it had preserved its normal dimensions and was covered with cartilage. There was no trace of the round ligament. Believing that there had been a fall with resulting disability when the child was three years old, M. Broca inquired whether the luxation was congenital or traumatic; and M. Legendre remarked that congenital luxation usually passed unnoticed until the time when the child began to walk or to stand erect, and if there was a fall it was thought that the luxation occurred at that moment. Cruveilhier, continuing the discussion, expressed the opinion that neither the position of the femoral head, nor the state of the cotyloid cavity, nor the absence of the round ligament were sufficiently characteristic and decisive to permit him to say whether the case was one of old traumatic dislocation or one that was congenital.

Also Cruveilhier, who was the best judge of the question, held that in congenital luxation of the hip, even after the 16th year, the cotyloid cavity might preserve its form, its depth, its cartilage, and the femoral head its dimensions and its cartilage.

I have found that the depth of the cotyloid cavity remains normal up to a variable age, even up to the 12th year; and after having assured myself by means of a needle that this is the condition in the case under treatment, I try to replace the head of the femur. If the trochanteric muscles are not yet retracted, the femoral head can be immediately replaced in the cotyloid cavity and it may remain there. When this retraction is present the head of the femur may be brought down to the acetabulum, but it cannot be retained in that position; it becomes displaced when the limb is extended. And these cases result in this way even if extension be indefinitely continued. Consequently, if there is much difficulty in overcoming the force of the retracted muscles, I commence by dividing subcutaneously the trochanteric muscles and the great adductor. It is easy then to recognize the position of the femoral head and to find out with certainty whether it can be made to occupy the cavity of the acetabulum.

Having thus divided these muscles at the place of their insertions, the

head of the femur can then be drawn down and securely fixed with bandages and with weights attached at the knee or the foot. The head of the bone rests thus in place and there is no tendency to displacement, so that in about four weeks one may commence passive movements. In about another fortnight active movements are permitted, the patient lying on a couch when the thigh can be easily flexed and abducted; the patient is supplied with the convenient apparatus and encouraged to move about.

I have treated 52 cases of this kind of dislocation during the last 35 years; 41 were seen in girls and 11 in boys; the dislocation was unilateral in 22 girls and in 5 boys.

I believe that the following observation indicates correctly the manner of treatment which I adopted in the majority of these cases: In April, 1895, with the aid of Mr. Henry Baker and Mr. Bailey, I divided the trochanteric muscles and the great adductor of the left side in a little girl, of good health and development in every other way, aged 12 years; there was no other deformity; I had previously sounded the acetabulum to be certain of its depth. The femoral head was then mobilized and brought down, extension was made on the fourth day when the wound was healed; and the head of the femur was then solidly fixed in the cotyloid cavity, from which there was no tendency to slip. The articulation of the hip was securely bandaged and extension was continued day and night. In about four weeks passive movements were executed and two weeks later active movements were made while the patient lay on the bed. In about three months the child was raised up and permitted to walk. The two extremities were of the same length, and, though there was a partial disability, there was no displacement when walking. In the month of July the child walked firmly and without limp, and when lying down was able to flex completely the thigh upon the abdomen.

When the acetabulum is so much filled up that it is impossible for the femoral head to find its place I have hollowed out with a special gouge as much as I could subcutaneously so as to create a cavity sufficient for the lodgement of the femoral head; but I have never done the operation by open incision after the manner of Professor Lorenz, of Vienna, and Dr. Hoffa, of Wurtzbourg, and I have never experienced difficulty in using the gouge cubcutaneously. However, when obliged to employ these means the movements of the joint are less free and there is a slight tendency to anklyosis.

The operation presents a great advantage when the dislocation is unilateral, or when the movements made on one side are good and the luxation double. When there exists a real consolidation, and when a new joint has been formed, as in the case of Fournier, I have never interfered for this new joint will be sufficiently well formed and sufficiently deep to lodge the femoral head and to permit of free movements, which one might lose through interference. On the other hand, the femoral head can always be brought down after section of the trochanteric muscles, and either simply or after the use of the gouge it can always be placed in the cotyloid cavity without having a tendency to return.

BRODHURST, *Rév. d'Orthopedie, 1896.*

EARLY RECOGNITION OF PARETIC DEMENTIA.

Dr. B. Sachs concludes (*New York Medical Journal*, Vol. lxviii, No. 2) that in the earlier stages of every form of paretic dementia the physical signs arrest attention. Chief among these are, in the order of their importance: (1) The stammering, tremulous speech; (2) the tremor of the facial muscles and of the tongue; (3) the pupillary symptoms; (4) the change in the individual's handwriting; (5) the exaggeration or the absence of the reflexes. The disturbance of speech is unquestionably one of the earliest symptoms, and is so characteristic that one is not infrequently tempted to make the diagnosis of progressive dementia if a patient who has shown some mental change has in addition that peculiar stammering utterance which makes the use of words of many syllables, or of sentences in which there is any alliteration, particularly difficult. Yet it occurs at times in persons whose mental deterioration is of distinctly alcoholic origin.

The tremor of the facial muscles, which occurs only in progressive dementia and in chronic alcoholism, is a symptom of the greatest value. If alcoholism can be excluded, it is unquestionably a grave symptom, and may well support the diagnosis of paretic dementia.

The pupillary symptoms have by many writers been placed first among the physical symptoms. In several patients of mine they have not been developed until long after the appearance of the characteristic speech disturbances and of the facial tremor. The typical Argyll Robertson pupil is common enough, and particularly in those forms associated with tabetic symptoms. The complete immobility of the pupils, both to light and during accommodation, is present in a large number of cases, and is often associated with inequality of the pupils and with the history of preceding ocular palsies, all of which occur more commonly in those who have been exposed to syphilitic contagion. The irregular contour of the pupil has been described as occurring in paretics. It is not dependent upon a preceding iritis, is more probably due to defective innervation, and is, by the way, often seen in persons with constitutional syphilis and also in some young and healthy persons.

The changes in the handwriting are of special value, not only as illustrating the tremor of the fingers and of the hand, but as giving the first evidences of that mental dissolution which is most marked in acts which have been performed with the greatest skill. The dropping of letters from words that were written with ease and almost unconsciously, the omission of syllables, the running together of words that should be separated, and the entire failure to punctuate, may be the first signs pointing to serious mental defect. Too much importance should not be attached to the tremor alone, for in other diseases, and particularly in multiple sclerosis, very similar physical disturbance occurs.

The reflexes invite close attention, for, if absent, they may be part of the symptoms of a tabetic process with which progressive dementia is frequently associated. If exaggerated, great care should be taken not to formulate the diagnosis unless a purely neurasthenic condition can be safely excluded.

DIET TREATMENT OF HEADACHE, EPILEPSY AND MENTAL DEPRESSION.

Alexander Haig, M.A., M D., Oxon., F.R.C.P., in *Brain*, summer number, says: "Those headaches associated with an excess of uric acid in the urine are treated by excluding from the diet all fishes, meat, eggs, tea, coffee and cocoa, and giving milk, cheese, pulses, cereal foods and fruit. From the change of diet the nutrition of the patient is lowered, so that the stored reserves of uric acid flood the blood, and, besides, many vegetable foods introduce more alkali and less acid into the body than do the animal foods interdicted, and thus increase the alkalinity of the blood, and flood it with uric acid. For these reasons an increase of headache occurs in the beginning of the treatment. To tide the patient over the period of excessive headache, a mixture of bromide of ammonium and salicylate of ammonium is given. However, this plan of diet is to be persevered in, for the increase of headache, in the beginning of the treatment, when the first rush of uric acid occurs, is to be regarded rather as a favorable than an unfavorable sign.

"In mental depression the same diet is used, and, to conserve the patient's strength and energy, he is put to bed with most happy results.

"In the treatment of epilepsy success was not so well marked, but a thorough trial of treatment is insisted upon before the plan is abandoned. Here, too, an increase in the number of convulsions may occur in the commencement, which, however, is not to be regarded as unfavorable."

ABOUT ERGOT.—For some years we followed the lead of Podwissotsky and assayed ergot extracts for sclerotic or ergotinic acid, as most manufacturers do to-day. We now know as the result of our own experiments upon animals that ergotinic or sclerotic acid is not only not the active principle of ergot, but that it is harmful when injected because it depresses the nerve centers and exerts no hemostatic influence. We have also found that the determination of resin in Cannabis Indica, and extractive in Digitalis, is absolutely useless in so far as it serves as an indication of the activity of these drugs.—*Therapeutic Notes.*

THE PHYSIOLOGICAL EFFECTS OF OVARIAN JUICE.—Ferré and Bestion make a report in the *Therapeutic Gazette* of the effect of a glycerine and water extract of ovary, and find it to possess distinct physiological influence in males and females, and they find that males cannot stand the doses well borne by females. If a large dose be given to a male he becomes intoxicated and dies, and a female requires double this dose to produce death. The symptoms shown by the male consist in progressive hypothermia, the production of sloughs at the point of injection, excitement of the genital apparatus, with erections and ejaculation of semen, and finally tremors and paralysis. Hematuria may develop. They found tubular nephritis, and in the paralyzed animals congestion of the spinal cords, particularly in the area of the spinal center in the lower dorsal and

lumbar region. There were also well advanced lesions in the anterior cornua of the spinal cord. Ferré and Bestion conclude that the juice has a distinct effect, and that the partial immunity of females to this effect is due to the fact that they are accustomed to the ovarian juice in that doses similar to those which cause death in the male will do so in females below puberty who are not accustomed to ovarian activity. They believe that ovarian gland should be cautiously given to women who have passed the climacteric for these reasons.

ERYTHOMELAGIA.—Dr. Rost, Prof. Oswald's assistant at the Augusta Hospital, Berlin, recently presented a case of this rare disease at the *Verein fur Innere Medicin.* As he has been able to find only some 40 cases of it altogether in the literature, each case is of special interest, it aroused a good deal of attention and was carefully observed by most of those present. The opinion expressed by Dr. Rost, which seems to be that generally held by the internists, is that of Dehio: He considers it an independent disease and due to a state of irritation of the cells of the anterior horns at certain levels in the cord. Some time ago a series of articles from Vienna claimed that it was a symptom-complex with intimate relations with such other affections as Raynaud's disease and the neurotic edemas. This view does not seem to meet with much favor in Germany and its independent character as a disease with probably a special functional disturbance at least of definite anatomical elements, is conceded.—*Journal American Medical Association.*

BREWERS' YEAST IN FURUNCULOSIS.—Brocq praised the action of brewers' yeast in furunculosis when presenting a child in one of his lectures, and pointed out the great value of this substance in all suppurating forms of skin disease—impetigo, acne, and especially furunculosis. Properly administered, brewers' yeast would arrest an attack of furunculosis within eight days. The only difficulty encountered was in obtaining fresh yeast, as only this is efficacious. Two or three coffee-spoonfuls are to be taken at the beginning of a meal in a little water. This dose may, however, be increased without bad effects. When brewers' yeast cannot be obtained, compressed yeast may be prescribed, although it is not so well borne. On account of its action on superficial suppurations, brewers' yeast might also be tried in gonorrhea.—*Jour. de Med.*

ICHTHYOL IN ACUTE LARYNGEAL CATARRH.—Cieglewicz obtained brilliant results with ichthyol in acute laryngeal catarrhs. He orders its inhalation in cases of catarrhal laryngitis and the pseudo-croup of children by means of a Richardson's atomizer as a 2 per cent. solution in cold water. The inhalations were practiced, according to the severity of the disease, from three to five minutes at a time, once or twice daily. The patients accustomed themselves easily to the taste and smell. Cough and hoarseness rapidly disappeared. In some cases the effect was so surprising that an attack of coughing was cut short from one inhalation of ichthyol. No bad effects were ever experienced.—*Praeglad Lekarski.*

THE USE AND ABUSE OF PESSARIES.*

BY DR. BYRNE.

MR. PRESIDENT AND GENTLEMEN,—Though this subject is one that may be considered threadbare, it having been discussed so often, yet in spite of that, and of the fact that at an early day after the organization of this Society I took occasion to make some general remarks on the same subject, it is to be deplored that the teaching of the best authorities of the present day, including that of our distinguished friend present, Dr. Skene, and the plain statements and directions laid down for the management of these cases, are every day ignored.

Indeed, I think I have removed a larger number of improperly shaped and ruinous so-called retroversion pessaries during the past three months than I have done in as many years previously. There would seem to be a very general misconception, not only as to the correct form, but also regarding the manner in which a proper pessary affords relief in these cases. Many general practitioners appear to think that it directly supports the uterus; in other words, that the uterine body actually rests on the bar which goes toward the cul-de-sac. Now, we all know that it does not, but simply, by elevating the cul-de-sac of Douglas, and rendering the retrouterine parts more or less tense, the cervix is thereby drawn back, and the uterine body proportionately swung forward and upward. In this manner only does a properly shaped pessary afford relief, provided the uterus be freely movable, and no adhesions or other complications exist. If, however, the uterus is found to be but slightly bound down by adhesions, these should first be carefully stretched or gradually broken up by daily packing the posterior cul-de-sac with numerous small but compact tampons soaked with carbolized glycerin. Even a week of such treatment will often render a case safely manageable by a pessary; whereas, without these preparatory measures, a resort to any mechanical device would be likely to do more harm than good.

It is not my intention, however, on the present occasion, to say anything touching diagnosis, or the principles, much less the details of the treatment of retrodisplacement of the uterus. My prime object is to call the attention of this Society, and through it that of the profession in general, to the frequent employment of a viciously shaped so-called retroversion pessary, by which serious and often irretrievable injury is inflicted.

The average general practitioner, without due reflection as to the mechanism of retroversion and the pelvic structures involved, encounters what he deems to be a case of retroversion, or it may be retroflexion, and yet it sometimes happens that it is neither one nor the other. However, he forthwith applies to an instrument dealer, and the latter individual, assuming the *rôle* of adviser, recommends and furnishes what he, from a commercial standpoint, conceives to be the right thing. As a result, the chances are about even that the very article against the use of which

* Read before the Brooklyn Geological Society.

most gynecologists, as well as myself, have been protesting for years, will be selected. I have brought with me some specimens of these dangerous contrivances which I, and no doubt others here present, have been frequently called upon to remove. It is hardly necessary for me to say that if the case should happen to be one of simple retroversion, and, if the kind of pessary to which I refer be worn for any length of time, a flexion will be the consequence; while, if the latter deformity existed at first, the case will be made worse thereby, if not rendered incurable.

In contrast with these pernicious devices, I here submit some specimens of what we all know to be properly shaped instruments, and the use of which, in suitable cases, and when properly adjusted, rarely fails to afford immediate relief.

And yet, however perfect in form and general outline a pessary may be, the general practitioner should bear in mind that, in size particularly it must be suited to each particular case, and its adjustment effected with due regards to the parts with which it is brought in contact, and with as much care as would be observed in fitting a boot to a tender foot; otherwise it can do no good, but, on the contrary, may be productive of much harm and discomfort to the patient. In this connection I would repeat and emphasize what has been said before: that the manner in which a proper pessary relieves a retroverted uterus is by tightening up the cul-de-sac, and thus drawing back and slightly upward the cervix, while the fundus is proportionately swung forward. So, we do not, nor can we by any safe mechanism, completely restore a retroverted uterus. We simply take away the pressure of the fundus from the rectum, improve the circulation, and thereby, and in various other ways, relieve the patient.

For a more complete and permanent cure, apart from operative measures, as shortening the round ligaments, and ventral fixation, etc., all of doubtful permanent utility, in my opinion, we have to look to pregnancy and parturition as an important means to that end. If, during the period of involution following confinement, and for some time longer, recourse is had to a suitable pessary, a large proportion of these cases may be cured, though in some the occasional return to its use for periods of a week or two will be found necessary and beneficial.

Before closing, and in connection with the act of applying a pessary for retroversion, I must not omit referring to a stereotyped phrase quite often employed in directions for the management of this particular form of displacement, namely, "first replace, or restore the uterus, and then apply the pessary." I am at a loss to understand what is meant to be conveyed by this instruction; because, if, on careful examination, the uterus is found to be freely movable, i.e., the malposition uncomplicated by inflammatory products or adhesions, and, therefore, and not otherwise, in a proper condition for mechanical treatment, the very act of adjusting a suitable pessary restores that uterus as much as any proceeding can. If, for example, a sound in careful hands be passed with its curve reversed, a little beyond the os internum, and pressure is then made on the posterior aspect of the cervical canal, while the sound is gradually rotated in a normal direction, the uterus will now be in nearly a normal position, so long as the sound remains. On its withdrawal, however, the

organ will immediately flop back, nor will the application of any mechanical device serve to maintain it in the nearly normal position to which it was brought by the aid of the sound. Hence, this talk of restoring the uterus first, and then applying the pessary is sheer nonsense.

But, Mr. President, I feel that in these discursive remarks, I have far exceeded my intention at the outset. I am not without hope, however, that through some interchange of views here, to-night, and the publication of our transactions, the general practitioner may be brought to realize the evil consequences likely to follow the use of improper pessaries in cases of retrodisplacement of the uterus.

COLOTOMY AND COLOSTOMY.

Colostomy consists in bringing the descending colon up to the anterior abdominal wall, to which it is stitched, the opening into the lumen being made at once or after an interval, according to circumstances.

The great disadvantage of this operation is that it does not entirely prevent the entry of fæces into the distal part of the bowel, where they tend to set up inflammatory troubles. In colotomy, the gut is cut completely across, the proximal portion brought out of the wound, and the distal closed by sutres and returned to the abdomen. This method is not entirely satisfactory, as the distal end tends to become distended by the accumulation of its own secretion, which may eventually lead to ulceration. Konig and Sonnenburg leave the upper extremity of this portion open and attach the artificial anus to the abdominal wall below, whereby the rectum can, if desired, be irrigated from above. Another means of preventing fæces from getting into the rectum is by the formation of a spur, but the disadvantage of this method and colotomy is that they leave a long and freely movable colon and mesocolon. The best method consists in the ordinary operation of colostomy performed at one sitting, but preceded by partial occlusion of the distal portion of the bowel. A ligature is tied around this, occluding it to about one-half its diameter, and the bulging serous surfaces on either side are sewn together with interrupted stitches. An artificial constriction is thus produced, which prevents the accumulation of fæces in the rectum. In attaching the gut to the belly-wall, first sew the serous and muscular coats of the intestine to the parietal peritoneum, and then pass the ordinary sutures through both bowel and abdominal wall. If, however, this will lead to considerable tension, attach the intestine to the fascia of the external oblique, leaving the skin free, but shutting off the muscular planes from the risk of infection.—MOSETIG-MOORHOF (*Wiener Med. Presse*, No. 3, '98).

A good opening for an active young doctor in a small town in North Dakota. Only one doctor in the town and he is over-worked. Good farming country and nearly all Canadians. Write CANADA LANCET for information.

A WOUND OF THE PERICARDIUM AND PLEURA—TREATED BY SUTURE.

On the night of January 26, 1898, I received a telegram asking me to visit one of the interior towns of the state and treat a case of wound of the pericardium. On arriving at the bedside of the patient I found a very strong, robust man, aged twenty-eight years, and six feet two inches in height, looking very pale and lying obliquely across the bed, on his back, breathing fifty-six times per minute with pulse of 140 beats per minute. His clothing had not been removed. His chest was in part covered with a sheet, which I removed, revealing a large wound in the left side of the thorax through which the heart could be seen beating violently. With each respiratory movement the heart projected through the wound and air, making a rough blowing noise, rushed into the pleural cavity. The fifth rib was in part gone from the costal cartilage backward a distance of about two inches, and about one and one-half inches of the costal cartilage was gone. Beneath where the rib and cartilage should have been was a wound more than four inches in length, dividing the pericardium and pleura, and through it the apex of the heart protruded. Doctor A. C. Wood had the case in charge, and had devoted his resources mainly to sustaining the patient and protecting the wounded tissue from infection. At the time I made the preceding observations fourteen hours had elapsed since the injury. It was caused by the bursting of a circular saw in a sawmill. The man was running the saw. The left pleural cavity was open, and a ragged wound could be seen and felt in the lower lobe of the left lung. A large quantity of blood had been lost, but there was no bleeding now. We hastened to close the wounds, stitching up the pericardium first. Placing my left index finger on the heart, I pushed that organ backward and downward until I could catch the cut margins of the pericardium with forceps and draw them forward and in contact so I could stitch them together with continued catgut suture. In thrusting the needle through the margins of the pericardium I used my left index finger as a guide to prevent the needle from piercing the walls of the heart. After the pericardium was closed we next sutured the *pleura*, and after doing that we proceeded to close the rent in the chest *wall*, using catgut for the purpose. Care was observed to bring all lacerated and cut ends of intercostal and thoracic muscles accurately together, and to hermetically close the thoracic fasciæ and integument with sutures. Almost directly the chest wall was closed and the heart and lung were excluded from the circumambient air, the respiration fell to thirty-four inspirations per minute. The heart also beat more slowly, and it was marked by all observers that the patient appeared better. No anesthetic was used as it was not deemed wise to jeapordize the greatly enfeebled respiratory and circulatory forces. The man appreciated fully the gravity of his wound, and endured the pain incident to the operation with scarcely a murmur. An aseptic dressing of gauze and cotton was applied to the wound and secured by a broad bandage passed around the chest. Some doses of morphine and whiskey had been given him by Doctor

Wood before my arrival; further than this the patient relied wholly upon his own fortitude in enduring the pain. Doctor Wood and I decided to treat the wounds on the principle which commonly serves best in case of serious wounds elsewhere, namely, by vigorous elimination by cathartics. Sulphate of magnesia in saturated solution in tablespoonful doses was commenced directly the operation was completed and the patient made comfortable in bed. The dose was repeated every two hours until a good free movement of the bowels was provoked, then it was continued less frequently. A letter from Doctor Wood ten days after my visit informs me that the patient's bowels are moving sundry times every twenty-four hours, that he has had no temperature above 101°, that pulse and respiration are quite normal and that his appetite and sleep are good.

GLAZED BOOK PAPER BAD FOR THE EYES.

The effect of glazed papers on the eyesight has recently occupied the attention of some German doctors. One authority examines the causes of the changes in the general reading and writing habits of the nation, and explains that in the earlier part of the century the old rag papers then in use, both for writing and printing purposes, were mostly of a dull gray or blue color, and were coarse-grained, so that thick letters had to be used by writers with quill pens or by printers on their old slow presses. With the introduction of more modern fibers, paper received a smoother surface, steel pens could be employed, and the printing paper could travel over quicker printing presses. The fashion for brilliant colors and elaborate typesetting has been carried to such a state of perfection that a reflection is often created which could never arise from the rougher surface. Now, what is the effect upon the reader's eye? In the old books or letters, with a mild and soothing light, the surface contrasted easily from the thicker and darker type or writing characters; now the highly glazed surface offers reflections of the light which, with the more elaborate and thinner type, produce a lot of shades and lights that are most trying to the eye. The paper has often to be turned in various directions to be seen more clearly in order to distinguish the gray (or, may be, other shades) of the type from the shining white of the paper. This is similar in effect as to the result of trying to decipher writing in the dusk. An experiment would soon prove this. Take an old edition, say, of Shakespeare, and a new magazine on highly glazed paper, and compare the sensation in the eye after half an hour's reading. The doctors, therefore, propose that the public inspectors of schools should order the use of sanitary paper for the eyes, by which they mean that a glazed or highly polished surface should be avoided, and the colors chosen should rather be gray or light blue, but no white, and in fact, no brilliant colors at all. The type should be clear and simple, and not too thin. The children, whose eyes require protection, and through them the parents, should be taught to demand their favorite books and papers to be printed in the right style, and the excesses of a falsely guided taste should be avoided. It is suggested that a few years of such policy would soon improve the eyesight.—*Invention.*

TREATMENT OF ANGULAR CURVATURE OF THE SPINE.

Gevaert (*Annales de la Societe Belgede Chirurgie*, No. 4, July 15th, 1898), in a report on the treatment of Pott's curvature, states that the method of rapidly extending the spine is not free from risk. Death may occur under chloroform or from shock; an abscess in connection with the diseased bone may be ruptured into an internal cavity. The treatment may be followed by paralysis of the lower limbs and the bladder; or may result in rapid generalisation of tuberculosis. Extension of the spine and immediate immobilisation are applicable only to curvatures in the dorsal region, especially the middle of the back. Curvatures in the cervical region are best treated by slow and continuous extension, and those in the lumbar region by Sayre's plaster jacket. Cutting operations, such as cuneiform resection and laminectomy, are now, the author states, rejected by most surgeons. The loss of osseous material caused by the breaking down of the bodies of diseased vertebra cannot, it is held, be repaired by new bone. Consequently the treatment by rapid extension is applicable only to recent cases of Pott's disease or those in which the angular projection involves but a small number of vertebræ. It is contraindicated in the case of cachectic children who are troubled with cough, or suffer from abscess or fistula, or who present signs of degeneration of internal organs.

INCREASE OF CANCER IN ENGLAND.

In England four and a half times as many people die now from cancer as half a century ago, and no other disease can show anything like such an immense increase, W. Roger Williams says in *The Lancet*. "Probably no single factor is more potent in determining the outbreak of cancer in the predisposed than high feeding. There can be no doubt that the greed for food manifested by modern communities is altogether out of proportion to their present requirements. Many indications point to the gluttonous consumption of meat, which is such a characteristic feature of this age, as likely to be especially harmful in this respect. Statistics show that the consumption of meat has for many years been increasing by leaps and bounds till it now has reached the amazing total of 131 pounds per head per year, which is more than double what it was half a century ago, when the conditions of life were more compatible with high feeding. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it seems probable that there may thus be excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors co-operate, and among these I should be especially inclined to name deficient exercise and probably also deficiency in fresh vegetable food."

RELIEF OF PAROXYSM IN DYSMENORRHEA.

BY W. R. INGE, M.D.

New York County Medical Association. Stated Meeting, April 18th, 1898.
George Tucker Harrison, M.D., President.

Among the many discrasæ feminæ nothing so often presents itself to the physician for amelioration as dysmenorrhea.

To expect a drug to cure a dysmenorrhea due to obstruction of the menstrual flow, caused by a stenosis of the os, is absurd, but to find a woman willing to be satisfied by a mere narration of causes alone, is equally so.

I have made it a rule, when called to a case of dysmenorrhea, to relieve the pain at once, then, at my leisure, I can study out the cause. For all practical purposes dysmenorrhea can be divided into two heads—constitutional and local. Systemic causes arise from a depraved blood-supply, or neurasthenia. Local ones from some abnormality of the uterus, ovaries, or Fallopian tubes. It is extremely difficult sometimes to make a differential diagnosis between these two—indeed, it taxes the utmost skill of the gynæcologist.

It is not the purpose of this paper to discuss that subject. I only propose to devote a few lines to the medical—therapeutical side, and to present a few cases to demonstrate the beneficial effect accruing from the use of some remedies upon this distressing complaint.

CASE I.—Miss H., December 6, 1896; age 32; had suffered for ten years; weight 112 pounds; anemic, no appetite. Upon examination found anteflexion just above os, cervix thin and quite long, bent acutely, made forcible dilation and prescribed rest for two weeks in bed. Made good recovery, but caught cold in April, 1897, and presented herself again for treatment on April 19th. Complained of insomnia, anorexia, and constant "bearing down pains," lasting for forty-eight hours from beginning of menstruation. Showed me "what passed" that day, which proved to be a case of membraneous dysmenorrhea, enough to excite suspicion. It was a large fragment, representing almost the whole interior of uterus, there being three openings in it, the external one and two others for Fallopian tubes. I prescribed chloral, extract hyoscyamus and camphor, which seemed at the time to relieve the spasmodic attacks, but at next period all the above mentioned symptoms reappeared. Gave her cannabis indica with bella-donna and asafetida, to be taken three times daily, beginning three days before contemplated attack. Very little relief obtained. Tried all sorts of antispasmodics and alteratives for the following four or five periods, but with rather poor results, until I happened upon ammonol. "Eureka!" Ten-grain dose was exhibited, followed in half-an-hour by another. Afforded complete relief in less than an hour. Since then she anticipates the dysmenorrhea by taking a tablet, 5 grains, every night for two or three days before expecting the catamenial flow, and 10 grains, two tablets, when flow is established, with complete cessation of former distress and agony.

In six other cases, congestive form, I have administered the remedy with entirely satisfactory results. The benefit accruing from its use appears to be derived from relieving the congestion of the uterus, stimulating that organ to renewed functional activity. Ammonol is not a secret remedy, as so many German products are. It is an ammoniated phenylacetamide of the amido-benzine series. It is quite different from other antipyretics by the chemical combination of ammonia, which gives it a stimulating rather than a depressing action upon the heart, and never leaves evidences of nervous phenomena.

SOME MEDICAL CULLINGS.

TWO RELIABLE REMEDIES COMBINED.

We meet with many cases in practice suffering intensely from pain, where from an idiosyncrasy or some other reason it is not advisable to give morphine or opium by the mouth, or morphine hypodermically, but frequently these very cases take kindly to codeine, and when assisted by antikamnia, its action is all that could be desired.

In the grinding pains which precede and follow labor, and the uterine contractions which often lead to abortion, in tic-douloureux, brachialgia, cardialgia, gastralgia, hepatalgia, nephralgia, and dysmenorrhœa, immediate relief is afforded by the use of this combination, and the relief is not merely temporary and palliative, but in very many cases curative. The most available form in which to exhibit these remedies is in Antikamnia and Codeine Tablets, each containing 4¾ grains Antikamnia and ¼ grain Sulph. Codeine.

In pulmonary diseases this tablet is worthy of trial. It is a sedative to the respiratory centers in both acute and chronic disorders of the lungs. Cough, in the vast majority of cases, is promptly and lastingly relieved, and often entirely suppressed. In diseases of the respiratory organs, pain and cough are the symptoms which especially call for something to relieve; *this* combination does this, and in addition controls the violent movements accompanying the cough, and which are so distressing.

THE SENSIBLE TREATMENT OF LA GRIPPE.

The following suggestions for the treatment of La Grippe will not be amiss at this time, when there seems to be a prevalence of it and its allied complaints. The patient is usually seen when the fever is present, as the chill, which occasionally ushers in the disease, has generally passed away. First of all, the bowels should be opened freely by some saline draught. For the severe headache, pain and general soreness, give a five grain Antikamnia Tablet, crushed, taken with a little whiskey, water or wine, or if the pain is very severe, two tablets should be given. Repeat every two or three hours as required. Often a single ten grain dose is followed with almost complete relief. If after the fever has subsided, the pain, muscular soreness and nervousness continue, the most desirable medicine to relieve these and to meet the indication for a tonic, are Anti-

kamnia and Quinine Tablets, each containing 2½ grains Antikamnia and 2½ grains Quinine. One tablet three or four times a day will usually answer every purpose until health is restored. Dr. C. H. Bryce, Editor of *The Southern Clinic*, has found much benefit to result from five grain Antikamnia and Salol Tablets in the stages of pyrexia and muscular painfulness, and Antikamnia and Codeine Tablets are suggested for the relief of all neuroses of the larynx, bronchial as well as the deep-seated coughs, which are so often among the most prominent symptoms. In fact, for the troublesome coughs which so frequently follow or hang on after an attack of influenza, and as a winter remedy in the troublesome conditions of the respiratory tract there is no better relief than one or two Antikamnia and Codeine Tablets slowly dissolved upon the tongue, swallowing the saliva.

DOUCHE IN NASAL CATARRH.

℞ Antikamnia and Codeine, Tablets, No. xxiv.

Sig. :—Dissolve six tablets in a pint of tepid water and use one-third as a douche three times a day. Shake well before using.

BOILS, CARBUNCLES, AND FELONS.

TREATMENT.—The occurrence of suppurative processes should always be regarded as evidence of faulty metabolism, and search should be made to discover and rectify what is wrong. Patients with boils, carbuncles, and felons are never in perfect health, although it is extremely difficult at times to discover the cause on which the trouble depends. Iron is most commonly needed, but quite as often there will be digestive and assimilative difficulties. In the local treatment of the disease, the objects aimed at are, first, the protection of the inflamed area; second, exclusion of the air; third, a slight antiseptic action. To obtain this end the inflamed surface is covered with a thick layer of absorbent cotton, on the centre of which is smeared an ointment of carbolic, ergot, zinc oxide and powdered amyl, made up with an unguent of rose. When pus is present, the skin is left to part spontaneously. The ointment is applied constantly until the carbuncle heals.

In felons, the diachylon, or litharge, ointment, prepared according to the formula of Hebra, is employed; the pain grows less, and the patient's general condition rapidly improves, and the lesion in the finger terminates in a short time in resolution.—L. DUNCAN BULKLEY (*Brit. Med. Jour.*, Oct. 2, '97).

DEATH.

Dr. E. R. Woods, aged 38, died in Galt, Friday, Dec. 30th, after a somewhat protracted illness. The doctor was a very bright man and had a host of friends in the town.

HYSTERIA IN CHILDHOOD.—Bruns has recently published an important monograph upon this somewhat neglected subject. *(Boston Medical and Surgical Journal)*. One of the chief differences between the hysteria of childhood and that of adult life is that the former often presents itself in a monosymptomatic form, as a paralysis, a contracture, or a limited spasm, and that sensory disturbances, especially anæsthesia, and the hysterogenous or hysterophrenic zones are often absent. Paralytic conditions, contractures, astasia-abasia, aphonia, mutism, stammering and obstinate blepharospasm are important symptoms. Symptoms of motor irritation, such as tremor, chorea, grimaces, tics and spasm are not infrequent, and attacks of a psychical nature, delirium, somnambulism, chorea magna and obsessions are also of importance. The commonest sensory disturbance is hyperæsthesia of the joints, but amblyopia and amaurosis are occasionally observed. Boys are as frequently affected as girls. The affection is most commonly seen between the ages of 7 and 14, but it is not rare in children under 6. The severer cases were more frequently seen in children from the country, especially from lonely and distant villages. Poverty and defective training favor the onset of the trouble. The influence of heredity is somewhat exaggerated, but it is important. Direct imitation of alarming symptoms of any disease which may come to the child's notice, together with defective training, plays a very important part. A nervous and hysterical mother may train a child badly, but the bad influence of an alcoholic father must not be ignored. The symptoms are often of psychical origin and are associated with defective volition; all of them may be produced more or less voluntarily but loss of knee-jerk, degenerative atrophy, and similar "organic" symptoms form no part of uncomplicated hysteria; immobile pupils, fever, burns, etc., which have been described as hysterical symptoms, awaken a suspicion of deceit, but are not observed in children. The disregard of anatomical rules (paralysis on the same side as an injury to the head), the fact that the attacks are easily excited and as easily suppressed, the affection of only certain functions of muscles (as in astasia-abasia) point to the psychical origin of the trouble. It is often hard to draw the line between genuine hysterical symptoms and conscious simulation; to the natural tendency of hysterical patients to exaggerate is added the lively imagination of childhood. The prognosis is distinctly better than in hysteria of adults; not only the individual symptoms, but the hysteria *itself* may be cured. Before the age of six, and after the age of twelve, when the influence of puberty begins to be felt, the prognosis is worse. The longer the symptoms last and the oftener attempts at cure have failed, the less likelihood is there of cure. The question of treatment is very thoroughly considered. Separation from parents and surroundings takes, of course, the first place, but, in addition, special treatment is often necessary. Except for tonic and strengthening treatment, the only forms of treatment that are of advantage are those that affect the child's mind. Judicious neglect is of great advantage, especially in all paroxysmal attacks. Strong faradism and cold douches are of benefit, partly because they are unpleasant to the child, and thus lead him to control his symptoms. These form a part of what Bruns calls the treatment by "sur-

prise," the direct command to "rise up and walk," on which he lays much stress, pushing it even to the point, in some cases, of direct corporal punishment. Suggestion may be of value, but he has not made use of it in the hypnotic state.—*Charlotte Medical Journal.*

EARACHE.—Hinkel (*Buffalo Medical Journal*) summarizes a good article in the following valuable points:—

1. Earache, however slight, may signify disease that, neglected, may terminate in loss of hearing, and even of life itself.

2. Recurring earache in children is almost always associated with lymphoid hypertrophy of the pharynx, and permanent impairment of the function of the ear is prevented only by early surgical treatment of the adenoids.

3. Acute inflammation of the middle ear may be frequently aborted if proper treatment—mostly of a general sedative character—be administered early and with precision.

4. If relief be not obtained by the second day, an expert examination of the ear should be made, and proper surgical treatment applied to relieve intratympanic pressure and possible involvement of the mastoid cells or intracranial structures. Failure at this stage to obtain as exact knowledge as possible of the condition of the middle ear is criminal neglect.

CONVULSIONS, INFANTILE; ETIOLOGY,—Alcoholism on the part of the nurse is a competent cause of convulsions in a breast-fed child; such convulsions are preceded by nervous irritability, general hyperæsthesia, but without gastro-intestinal derangement, elevation of temperature, or pulmonary complication. They are apt to appear in extremely well-nourished children. As regards the fits, they show marked tendency to increase in number and severity. In some instances there may be anuria. Under such circumstances it is necessary to inquire carefully into the habits of the nurse, and to make a change as early as possible.—Meunier (*Jour. de Méd.*, April 25, '98.)—*Sajous' Monthly Cyclop.*

UNUSUAL COUGHS OF CHILDREN.—There are many varieties of coughs which do not proceed from pulmonary complications. Dr. Emil Mayer has recently published a pamphlet dealing with this not generally recognized fact. Some of these coughs which Thomson designates as useless are common both to adults and child, while one or two are peculiar to the age of childhood. These coughs, which are reflex in origin, are often the cause of much thought to the physician, and are by no means easy to diagnose correctly. The hacking night coughs of children fall under this category. According to Dr. MacCoy, of Philadelphia, these coughs are mostly due to naso-pharyngeal obstruction, and the reason that they are only troublesome at night is because when the child is in an erect position during the day, gravity lends its force to facilitating the escape of the secretions from the nasal passages, but at night when the child is lying down this secretion cannot escape by these means, and the cough is brought on by mechanical irritation. Again there is the paroxysmal hacking cough of children described by Dr. Francis Warner of London. This cough occurs in children who, although emaciated and unable to eat, have a normal temperature and the

physical signs of healthy lungs. Dr. Warner attributes this condition not to peripheral irritation, intestinal worms, affection of tonsils or pharynx. but to unbalanced central nerve action, and as his conclusions were based on the examination of 22,000 children in schools, he is in a position qualified to speak with authority. Lastly, there is the hysterical cough which is common alike to adults and children.—(*Pædiatrics.*)

INFLUENCE OF ALCOHOLISM IN THE FATHER UPON THE LIFE OF THE CHILD.—Anthony (*Centralbl. für Gynäkol.*) mentions a case of a healthy woman who was married at the age of seventeen years to a notorious drunkard, and who had by him, in her nine years of married life, five miserable little children, of whom four died within the first ten days after birth. The fifth one, by great care, was raised to the fourth year, when it also died. After this the woman was separated from her husband. She then married a healthy man, and had by him two children; the elder of whom grew to be four years old, and the younger, at the time of writing, was fourteen days old. Both were in perfect health. This great contrast between the children of different fathers plainly shows, inasmuch as syphilis was not present, that the alcoholism of the father of the first children destroyed their vitality.—*Medical News.*

OPHTHALMIA GRANULOSA.

℞ Guaiacol 1.0
Glycerine 100.0-200.0
D. S.—To be dropped into the eyes.—(*Rev. de Thérap.*)

IMPROVED COD LIVER OIL.

℞ Ol Jecoris asell 100.0
Saccharin 0.4
Ether acetic 2.0
M. D. S.—Two or three coffeespoonfuls daily.—(*Med.-chirurg Rundschau.*)

PIGMENT SPOTS.

℞ Hydrarg bichlorid 0.5
Sacchari 15.0
Ovi Albuminie 0.1
Succ. citr 30.0
Aq. destill 150.0
M. D. S.—To be applied in the morning and allowed to dry.—(*Medic.*)

THE USE AND ABUSE OF NORMAL SALT SOLUTION.

BY J. WESLEY BOVEE, M.D., WASHINGTON, D.C.

The term normal salt solution has been used interchangeably with artificial serum. Various compositions and strengths of the constituent elements of the blood have been used with these terms. According to Kirke's Hand-book of Physiology, salt exists in the blood plasma in the proportion of 5.546 parts per 1,000, and thus 6 per cent. is a good practical formula.

Blood transfusion, dating back to ancient Egyptian history, was the forerunner of the employment of normal salt solution, the change being made because of the inconveniences of the former. Thos. Latta, inspired by the chemical researches of O'Shaughnessy, injected salt solution into the veins of his patients. In 1855, cholera was treated with the intravenous infusion of salt solution. About this time Prof. E. R. Peaslee used it with egg albumen in ovariotomy. In 1879, Bizzozzero and Golgi injected it into the peritoneal cavity for various forms of hæmorrhage, which treatment soon proved unsatisfactory. In 1888, Dastre and Loye studied its action on animals, and the following year recommended it in the treatment of infectious diseases. Of the five different routes through which it is introduced, the intra arterial, suggested by Dawbarn, is considered unsafe in any condition, and its practice is not recommended. The subcutaneous route is the most useful for common application. In emergency work, the intravenous route will often be needed in severe hæmorrhage, and the rectal enema of solution will be found of great advantage in nearly all conditions in which no bowel lesion is to be combatted. In abdominal surgery, the peritoneal cavity will be the site selected, and even in vaginal hysterectomy it has been employed by the author, complete closure of the peritoneum following its introduction with elevated hips.

The physiological action of it is as a powerful stimulant to the cardiac ganglia and the nerve centres. The skin, kidney and intestinal functions are markedly stimulated and some other organs are similarly affected. Osmosis is markedly promoted by it, and as a result of increased arterial tension, the blood supply to the heart muscles is much increased. It has a hemostatic effect when applied locally to raw surfaces, lessening oozing by stimulating and contracting small vessels. Some experimenters have reported its power of increasing the number of red blood corpuscles.

It is eliminated by the skin neutralizing the perspiration and loading it with salt. The kidneys carry away a very large proportion of the amount in the circulation. The lungs remove it freely, crystals of it having been noticed on the lips for days after its use. Autopsies after its use under the skin, have shown a considerable quantity of it in the intestine, demonstrating that this is one of the avenues for its escape.

In general medicine, it has been used in the many forms of poisoning and in a few other diseases. In obstetrical practice, its use has been largely in sepsis, post-partum hæmorrhage and eclampsia. In surgery, it

is used to prevent and reduce shock in severe hæmorrhage and in sepsis, as well as for irrigation purposes. "Lavage of the blood" in sepsis and sapræmia has been largely used. Blood-letting and infusion has been practiced considerably in sepsis and in puerperal eclampsia. In cholera and cholera morbus, it is strongly indicated. Grandin has had excellent success in uræmia by colon irrigation with large quantities. In shock, it should be employed early, on the table preceding or during operation in bad cases, or after operation in milder ones. Severe hæmorrhage is to be treated in the same manner, though only after the hæmorrhage has been checked. Here is the strongest indication for the intravenous route. Large quantities left in the abdominal cavity after celiotomy, in properly selected cases, has a very salutary effect upon the viscera.

It is contraindicated in such blood conditions as hæmophilia, dyscrasias, etc., in active hæmorrhage, in myocarditis, pericardial effusion, atheroma, arterio-sclerosis, cardiac degeneration, thrombosis, etc. Chronic diseases of the lungs, kidneys or liver, especially if malignant, are aggravated by it. The presence of toxins in the blood has been shown to retard its elimination, thus rendering the employment of large quantities at a time inadvisable. It is necessary that the solution be sterile and hot when it reaches the tissues, though when used by the bowel, less care is needed regarding its aseptic condition. Hot solution avoids chills that are dangerous to weak patints. Probably one liter is enough to inject through one puncture of the skin, as localized necrosis and aseptic inflammation have resulted from overdistension of the tissue spaces.

Ordinarily, not more than one ounce per minute should be injected into the tissues or vein. Pulmonary œdema, dyspnœa, headache, vertigo, mental excitement, delirium, hallucinations, severe pain in the left side, with engorgement of the liver and spleen, occur from over distension of the blood vessels with salt solution.

Altogether, it is not a perfectly harmless procedure, as some would have us believe, especially when used promiscuously as to conditions and users.

MALIGNANT TUMORS AND ERYSIPELAS.

The question of the action of erysipelas and other acute infectious processes upon the course of malignant growths, or certainly some forms of them, persists in coming up from time to time, and the number of cases of apparent cure which must be considered well authenticated is steadily increasing. By "well authenticated" we mean cases in which a careful clinical and microscopical history is available. Richardson (in *Annals of Surgery* for December, 1898) reports a case which undoubtedly comes in this category, and which is of further interest from the fact that the infectious process did not have the ordinary symptoms of erysipelas, but was a deeper inflammation with the formation of much pus. The growth was a recurrent small round-celled sarcoma, and was of large size and, as it appeared, inoperable. During the healing of the operation wound infection occurred, and there were severe local and systemic disturbances. After the subsidence of these the tumor began to disappear, and eventu-

ally left no sign of its existence. Such results, even when occurring only once in many cases, must make us think of greater possibilities and stimulate us to investigation, though progress must necessarily be slow on account of the uncertain and unmanageable nature of the agent. Several writers have reported similar experiences often among a series of failures or doubtful results, and the idea seems now pretty firmly fixed that the erysipelatous process, and perhaps some other acute bacterial infections, exercise a powerful and sometimes destructive effect upon the cells which constitute certain malignant new-growths. All observers agree that sarcoma is the form of growth most regularly influenced by such treatment, and that carcinoma is very little and very irregularly affected. As we have noted, our agent is unmanageable and dangerous, and unfortunately, it is most dangerous when most efficacious. The virulent cultures of the erysipelas coccus have given the most satisfactory results as far as the growth is concerned, but in several instances have caused death from their own action. If the explanation of the results in these cases is that the bacteria, by their metabolism, produce certain substances which we may call toxins, fatal to those cells which have assumed an atypical course of growth and form the neoplasm, and thus cause them to disintegrate and be absorbed, we ought to be able to discover some way for the regulation and accurate application of such qualities as these particular organisms possess. If we can do this, we may yet have a very potent weapon against sarcoma, and possibly along similar lines may be able to combat the more dreadful carcinoma. Most experimenters have spoken of the necessity, or at least the usefulness, of making injections of these bacterial agents into or near the growths. If the favorable action of such material is systemic in character, the result ought to be as good, no matter where the injection is made, but if the action is purely local, like a caustic or a local antiseptic, we should reasonably expect only a local result, and consequently no *cure*. Experience has, however, shown that better results have been obtained by local injections, and the explanation probably is that the action is systemic and through the circulation, but that perhaps when used locally the virus has less chance to become attenuated and reaches its objects of attack in a more concentrated form. It is clear that a substance depending upon a more or less coarse local action could have no effect upon a metastasis which might be microscopic, and in the cases of sarcoma reported as cured we are justified from the descriptions, even without proof, in concluding that there were metastases, and that the action of the agent was systemic. The treatment of malignant disease is one of such great importance that we ought carefully to consider everything from scientific sources upon the subject, and, though it is a mistake to be sanguine, we must in connection with this subject rather seek explanations than deny facts. Whether the destructive action of these bacterial poisons upon the cells of malignant growths helps the theory of their parasitic origin is very doubtful.—***Medical Record.***

THE BACTERIA OF THE VAGINA AND THEIR PRACTICAL SIGNIFICANCE.

J. Whitridge Williams concludes a lengthy but interesting article as follows:

1. We agree with Kronig that the vaginal secretion of pregnant women does not contain the usual pyogenic cocci, having found the staphylococcus epidermides albus only twice in 92 cases, but never the streptococcus pyogenes, or the staphylococcus aureus or albus.

2. The discrepancy in the results of the various investigators is due to the technique by which the secretion is obtained.

3. As the vagina does not contain pyogenic cocci, autoinfection with them is impossible; and when they are found in the puerperal uterus, they have been introduced from without.

4. The gonococcus is occasionally found in the vaginal secretion, and during the puerperium may extend from the cervix into the uterus and tubes.

It is possible, but not yet demonstrated, in very rare instances, that the vagina may contain bacteria, which may give rise to sapremia and putrefactive endometritis by autoinfection.

6. Death from puerperal infection is always due to infection from without, and is usually due to neglect of aseptic precautions on the part of the physician and nurse.

7. Puerperal infection is to be avoided by limiting vaginal examinations as much as possible and cultivating external palpation. When vaginal examinations are to be made, the external genitalia should be carefully cleansed and disinfected, and the hands rendered as aspetic as if for a laparotomy. Vaginal douches are not necessary, and are probably harmful!—*American Journal of Obstetrics*, October, 1898.

THE FORCEPS, WITH ACCURATE DIAGNOSIS, A ROTATING AS WELL AS A PULLING INSTRUMENT.

A. N. Collins, M.D., in *The Physican and Surgeon*, September, 1898, writes that in delivery with forceps we desire to do with our instruments what the natural forces fail to do in the necessary time and order, and to do this with the least injury to the soft parts, and with a minimum of force, a knowledge of position becomes of the greatest practical value. Favorable diameters of the head must correspond with the favorable diameters of the varying canal through which it passes. We will but think back to our student days, when this subject was left in a mighty maze, a sort of mental delirium tremens of planes, positions, diameters and synchondroses, which again arose to our minds a mental nightmare as we stood in awe at the bedside of our first patient; robbed thereby of whatever practical common-sense nature had given us, vainly trying to recall what some honored, but over-oratorical, teacher had taught us.

To simplify the subject, I would suggest as an illustration, a flattened

cork in a bottle with a flattened neck, twisted one-fourth round. Let the cork represent the fœtal head, the twisted neck the canal. Seize the cork a few sizes too big for the neck with thin forceps that will sink into it and draw it. We see at a glance how necessary it becomes to rotate it into proper relations with the flattened neck of the bottle, if we are to remove the cork with a minimum of force and lacerating pressure upon the bottle. We also see the necessity of a knowledge of the position of the cork, that we may keep the diameters in proper relation.

In instrumental delivery keep the occipito-frontal diameter of the head always in the longest diameter of the pelvis through which it is passing, if possible. If not possible, owing to other presentations, rotate the resisting parts to the most roomy diameters, but to do this we must have a clear idea of position, the value of the knowledge of which we will for a moment consider.

1. In ease and rapidity of delivery without exhausting the patient, or unduly bruising the child.

2. Prevention of laceration of the perineum. In most cases the forceps are applied with the head well engaged in the superior strait in an oblique position. If a labor pain forces the head downwards, it will rotate, but if pulled from below rotation is imperfect, and the head emerges and presses upon the soft parts in the oblique position, and if the accoucheur be vigorous and unskilled laceration results.

Too rapid delivery, giving the tissues no time to relax. It is a well-known fact, that muscles and tissues rupture when rapidly stretched, that will not when equally stretched slowly.

4. By dilatation beyond its capacity to yield without tearing when normal in elasticity.

PRACTICAL NOTES.

FIRST CARE OF A BABY.—Hanson is one of those who believe that the baby who is started right stands a much better chance to grow up well and strong than if allowed to catch cold or get indigestion within the first few hours of life. He insists upon the following simple rules as being all important: (1) Do not expose the baby after birth to a greater change of temperature than is absolutely necessary. (2) Do not allow attendants to subject him to prolonged exposure while washing, but rub him over with lard (this usually being convenient), and quickly wipe him off and wrap him up warmly. (3) Do not use too fine a thread in tying the cord, and dress the same with dry, sterile dressings. (4) Give nothing but tepid water or some very weak aromatic tea until there is sufficient milk in the mother's breast for the child's requirements. (5) Notice the clothing and see that the abdomen and chest are not constricted thereby.—*Cleveland Med. Gaz.*

TREATMENT OF THE UMBILICAL CORD.—Bastard, in a paper on the effect of baths in the treatment of the umbilical cord of the new-born, makes the following statements: Since 1891 Pinard has abandoned the daily bath of the new-born in his clinic. The author wishing to deter-

mine the advantages of this method, in a statistical way, undertook the comparison of two series of new-born babies, each series consisting of 110 infants, born without instrumental assistance, and each weighing over 3,000 grammes (6.6 pounds). The infants of one series received a daily bath, those of the second were given only one bath, and that immediately after birth. In the infants not receiving a daily bath, the stump of the cord dropped off, on an average in five and four-tenth days; in those bathed daily in seven and four-tenth days. Pathological disturbances, as periumbilical erythema, suppuration, etc., occurred in 6.3 per cent. of the former and in 19 per cent. of the latter.—*Der Kinderarzt.*

BATHING OF THE NEW-BORN IN RELATION TO THE CARE OF THE NAVEL AND TO BODILY WEIGHT.—By the observation of 400 infants, half of whom were given a daily bath, and the other half not, Czerwenka determined in the first place that the process of mummification of the stump of the umbilical cord was not interfered with by the bath; the stump was thrown off on the seventh day in about 80 per cent. of the children who were bathed, and in about 94 per cent. of those who were not bathed. The author does not consider the dangers of infection by the bath as great as is usually assumed. The mortality due to umbilical infection amounted only to 0.5 per cent. As regards bodily weight, it was found that the average increase in those who were bathed, regardless of the method of feeding, was greater than in those not bathed. Therefore, the author concludes that it is wiser to continue the daily bathing of the new-born.—*Wien. Klin. Wochenschrift.*

PLASTIC SURGERY IN THE MASTOID PROCESS—Von Mossetig-Moorhof describes, in the *Cbl f. Chir.* of November 19, his method of closing a defect after ablation of a cholesteatoma in the ear, and all danger of recurrence is past. He cuts a tongue-shaped flap below the defect, after freshening the edge between two parallel lines drawn around the edge of the flap. The edges of the defect were detached all around so that they could be lifted with a hook. The flap was then turned back over the defect and the edges of the flap pushed under the raised edge of the defect all around. Four stitches held it in place and the space left by the flap was sutured in a straight line. The exposed under surface of the flap covering the defect cicatrized over in his six cases in two weeks. An extraneous flap might be applied, if desired, to render the operation more cosmetically complete.

PLASTIC SURGERY OF THE EYELIDS.—Professor Angelucci describes the following cases as a typic illustration of his method: After removal of an ulcerated epithelioma requiring the excision of both lids, of the lachrymal gland and of some neoplasmic nodules in the tissues of the orbit, two large flaps were cut, one on the brow and the other on the cheek, extending down to within one centimeter of the angle of the jaw, sliding the flaps together and suturing them with the horizontal median line of the orbit between, the eyebrow on the upper flap a little lower than its normal position. The orbital edge of each flap was sutured to the conjun-

ctiva of the cul-de-sac, except in the internal angle, where it was sutured to the peripheral segment of the bulbar conjunctiva, which had to be detached up to the limbus. The *Rev. Gen. d'Ophthalmologie* for October 31 illustrates the results a couple of months later. The new lids work and wink well, the secretions of the conjunctival sac are sufficent to protect the corneal epithelium, and although the cosmetic results might be better, the important problem of protecting the eye is solved.

SURGICAL TREATMENT OF ULCER OF THE STOMACH.—Berg urges the publication of all cases after having been followed long enough to determine the ultimate results, as the indications are still so uncertain. He describes thirty cases operated on. The first ten were ulcers with infiltration simulating a palpable tumor. His conclusions from the results attained were that pyloroplastics is inferior to gastro-enterostomy, which must occasionally supplement segmentary resection. The exclusion of the pylorus supplemented by gastro-enterostomy, protects best against the danger of progressive infiltration and perforation, when it is impossible to excise it as in certain cases. Seven cases of cicatricial stenosis of the pylorus were treated with gastro-enterostomy (in one case preceded by ineffectual pyloroplastics). The rest were for various benign affections. He warns against attributing serious gastric disturbances to hernia, and advises an exploratory laparotomy when the hernia is operated on. All his cases recovered.—*Nordiskt Med. Arkiv.*, xxxi, 5.

BONAIN'S LOCAL ANESTHESIA.—This process comprises the anesthesia of the external surface of the tympanic membrane with a mixture of phenol, menthol and cocain hydrochlorate, āā 1 gm., or 2 gm. of the phenol to 5 gm., or 1 gm. of the other ingredients. The internal surface of the membrane and the mucosa of the tympanum are anesthetized with two or three drops of a one-tenth solution of cocain instilled by an incision or incisions made in the membrane with a Hartman canula, mounted on a small syringe. The blood flows very little, if at all. His experience includes twenty-eight operations; paracentesis, destruction of synechiæ, mobilization, ablation of the ossicles, total ablation of the tympanum, also for hypertrophied tonsils and tuberculous infiltrations and vegetations of the larynx.—*Rev. Hebd. de Laryng.*, etc., November 26.

COCAIN AND SPARTEIN ANESTHESIA.—Bagot combines spartein with cocain, which obviates the depressing effect of the cocain on the heart, while rendering the anesthesia more lasting. He has a powder prepared beforehand: cocain hydrochlorate .04 gm, and spartein sulphate .05 gm. When ready to use, the powder is dissolved in one or two cubic centimeters of boiled water. As much as eight to twelve centigrams of cocain can thus be injected in fractional injections without accident. In operating on a tumor he injects 1 c.c. of the weaker solution on one side, and waits seven or eight minutes before injecting the other side. He can then commence the operation in a few minutes on the side first injected. If the operation requires over twenty minutes, a third injection can be made which keeps up the anesthesia for three-quarters of an hour.—*Gazette Méd de Liège*, December 1.

PAROXYSMAL HEMIGLOBINURIA.—In a discussion of several cases at the Berlin Medical Society, it was established that exposure to cold, even walking around barefooted in a bed-room, would in certain persons produce an attack of hemiglobinuria. The blood came from the ureters in one case. Avoidance of getting chilled has arrested the affection in certain cases as reported; Ewald observed that he had never derived any benefit from amyl nitrite, which has been recommended for hemoglobinuria.

ANTHRAX ON THE NOSE.—A. Strubell reports a severe case of gangrenous and necrotic anthrax spreading from the tip of the nose, with chills, fever, etc., completely cured with scarcely a scar, by frequent injections of a 3 per cent. solution of carbolic, a total of 400 Parvaz' syringefuls in eighteen days, combined with copious stimulants, warm baths, and hot cataplasms at a temperature of 50 to 55 degrees C., applied locally every ten minutes, night and day. The growth of the anthrax bacillus is checked at 40 degrees and permanently arrested at 42. Cultures from the nose were very virulent, but no bacilli were found in the blood.—*Munich Med. Woch.*, November 29.

ANEURYSMS OF THE ARTERIA ILIO-FEMORALIS.—The *Vienna Klin. Woch.*, of November 24, contains a detailed review of eighty-five cases in literature and a personal case, by F. Sehopf. He concludes: Compression should be attempted in every case if possible. It may cure alone and, if not, it at least prepares the way for a collateral circulation. If an operation is finally required, total extirpation, if practicable, is the safest method to follow. It ensures best against recurrences, promotes the development of the circulation, is no more dangerous than any other method in respect to the wounds and renders rapid recovery possible. The number of total extirpations of all kinds of aneurysms is increasing; according to Delbet's statistics, from 1875 to 1887, 320 aneurysms were treated with ligatures and 63 with total extirpation, or one extirpation to each five ligatures, but from 1887 to 1894 there were 189 ligatures to 76 extirpations, or one to two and a half ligatures.

WOUNDS OF THE HEART.—Professor Rydygier opens up the heart by a horizontal incision starting a little to the right of the sternum, and extending through it and still farther to the left, just above the third rib. The incision is then carried downward, obliquely outward to the left, including the left third, fourth and fifth ribs. The periosteum is then cautiously detached from the sternum, and the bones sawed. The triangular flap thus made is carefully raised, keeping close to the bones and detaching the muscles. The heart is thus amply exposed, while there is no danger of injuring the pleura or pericardium, and the liability of foam production is reduced to the minimum. Riedel states that in one case the air getting into the pericardium with the blood from the wound churned the blood into foam by the heart action, until it poured down over the whole chest wall. Rydygier's flap has only been tested on the cadaver.—*Vienna klin. Woch.*, November 24.

NEW SYMPTOMS OF MEASLES.—Meunier has noted a marked loss of weight in persons during the incubating stage of measles, when there are no symptoms as yet to indicate the disease. It is noticeable four or five days after contagion and amounts on an average to 300 or 50 grams a day in child of one to four years. It may even attain 790 grams. This progressive loss of weight continues several days and seems to be independent of the age, or severity of the affection afterward. He suggests that it may prove important in indicating and isolating the disease in schools, etc.—*Gaz. hebd. de Méd.*, 89.

FORMULÆ FOR CUTICOLOR OINTMENTS AND PASTES.—Rausch has been devoting much time to studying the best combinations for this purpose and testing them. He recommends the following formulæ, all for external use. The ichthyol preparations are adapted whenever an enemic and vaso-constricting effect is desired. Sublimate can be added at will, without affecting the color. 1. Cuticolor zinc ointment: Armenian red bole .03 gm., glycerin 6 drops, zinc ointment to 10 gm. 2. Una's zinc paste: Armenian bole .24 gm., glycerine 20 drops, eosin (1 to 500), 8 drops, zinc paste 40 gm. 3. Una's zinc sulphate paste: Armenian bole .24 gm., glycerin 20 drops, eosin (1 to 500) drops, paste of zinc sulphate 40 gms. 4. Una's ichthyolized zinc paste: ichthyol, 1 per cent; zinc paste 30 gm., eosin (1 to 500) 16 drops. 5. Ichthyol, 2 per cent.; zinc paste 40 gm., eosin (1 to 500), 20 drops. 6. Ichthyol, 3 per cent.; zinc paste 40 gms., eosin (1 to 500), 22 drops. 7 Ichthyol, 4 per cent.; zinc paste 40 gm., eosin (1 to 500), 40 drops. 8. Ichthyol, 5 per cent; zinc paste 40 gm.; eosin (1 to 100) 12 drops. Cuticolor gelanthum: Armenian bole .02 gm., eosin (1 to 500) 2 drops; zinc oxid 4 gm., glycerin 3 gm., gelanthum 20 gm.—*Journ. de Méd de Paris*, November 27.

SANGUINOFORM.—C. S. Engel of Berlin has applied to therapeutics the physiologic fact that the red-blood corpuscles in the embryo of mammals are nucleated and peculiarly rich in hemoglobin. He procures the embryo of the pig in large quantities, fresh from the slaughter-houses, and produces a powder from the blood-forming organs, desiccated and pulverized, with two parts sacch. lact.; a trifle ol. menth. pip., and for some cases, 2 per cent. ferrum oxydatum. This is administered, per os, three times a day, each dose, from what can be taken up on the point of a knife to half a teaspoonful. He is much gratified at the results attained, which correspond to the theoretic assumption of the value of this treatment with physiologic hemoglobin. In a boy of 7 years, the specific gravity of the blood rose from 1046 to 1057; the hemoglobin increased rapidly from 40 to 60, and finally to 75 per cent., in the course of two and a half months. His investigations were made on ten subjects, mostly chlorotic girls, and every two or three weeks the blood was carefully tested for its specific gravity, alkalinity, amount of hemoglobin, proportion of red and white corpuscles, blood plates, etc. His communication in the *Deutsche Med. Woch.* of November 24 is a theoretic and practical study of our present knowledge of the subject.

The Canada Lancet

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Editorial.

SANATORIA IN TREATMENT OF TUBERCULAR PULMONARY PHTHISIS.

Sanatoria for the treatment of tubercular pulmonary phthisis are now practically in the list of therapeutic agents. As affording isolation, they constitute at the same time, of course, very valuable prophylactics.

That this disease is in a measure infectious, cannot now be reasonably doubted. Whether the tubercule bacillus be the primary factor in the causation, or whether it be, as some authorities contend, *post hoc*, it seems clear that it may become so virulent as to be practically an infective agent and give rise to the disease in predisposed persons, especially in cases of advanced tuberculosis and in confined rooms. Isolation, therefore, of all such cases, with special care in disinfection, becomes of the utmost importance.

The medical profession is always ready to lead, as in fact it usually does lead, in all preventive measures. But having led to a start, and an understanding of the necessity for such measures, the much more interested general public must deal with this part of the subject, and provide the wherewithal to carry them into effect.

The subject of cure, or even of checking the progress of the disease, involves, too, a large measure of prevention. In order to treat this disease most successfully, advantage must be taken of every possible means which

tends to the removal, or lessening the effects, of all causes which favor the progress of the disease, as well as, on the other hand, of all remedies which are known to promote improvement in the general condition of the patient, ameliorate troublesome symptoms, or assist in any way in checking the progress of the disease, or even afford fair hope of so doing.

After the address of Mr. Lawson Tait at the meeting in Montreal, a few years ago, of the Canadian Medical Association, he was asked by a member to what he attributed his remarkable success as an operator. His reply was, in effect, that he attributed it to the exercise of the utmost care in every detail, and taking advantage of everything, apparently the most trifling, which was likely to promote the welfare of the patient. This principle is as applicable to medicine as to surgery. And in no other disease is it of so great importance, perhaps, as in tubercular pulmonary phthisis. Advantage must be taken of everything that is at all likely to help us.

In a large majority of phthisical cases, as we all know too well, to our loss, and to the vastly greater loss of the patients and their friends, it is quite impossible to have either prescribed or proscribed lines of treatment or management carried out while the patient remains at home, or indeed, outside of a special sanatorium. Nearly all such patients require to be almost constantly,—daily and hourly, under the eyes of the physician or a competent nurse; require to be constantly watched to be kept out of the proscribed and in the prescribed course. Hence with special institutions we might hope for a much larger proportion of cures.

Sanatoria are somewhat costly therapeutic agents. But when their benefits as preventives, too, are taken into consideration—when the old and well-known adage, suggestive of a multiple of twenty in their favor, with its infallibility in practice, it is at once seen that they more than make up for their costliness. Moreover, it is in the main only the first cost. With proper management, it is quite possible to keep a large number of patients in a sanatorium about as cheaply as they can be kept individually at home.

In organizing the movement, which it now seems clear will be a successful one, to construct near Toronto a Citizens' Sanatorium for Consumptives, on the most liberal principles possible—for receiving even the poorest patients regardless of their ability or inability to pay for residence, and in all stages of the disease, the citizens of Toronto are, it appears, taking the lead on this continent. A large institution of this character recently established in Chicago, comes nearest to this in liberality in respect to poor patients. And movements are now on foot in a number of cities in both the United States and Europe to construct similar ones. It is only during the last few months, however, indeed, since the project was inaugurated here in June last and the CANADA LANCET first gave an account of its aims and scope, that there has been any reports in our European exchanges of the many similar actions in cities on the other side of the Atlantic. Movements there now in this behalf are becoming quite numerous. It does not appear, however, that it is generally proposed that the sanatoria shall be open to all classes of patients, including those unable to pay and in all stages of the disease, as in the case of this one in Toronto.

A "National Association" for the prevention of tuberculosis was organized in London in July last, the principal object of which is the dissemination of information and for encouraging the construction of sanatoria by the citizens of the larger centres of population. Sir William Broadbent is chairman of the Executive Committee of this Association, and Mr. Malcolm Morris hon. treasurer. Sir Samuel Wilks, Sir William MacCormac and other eminent London physicians are members of the Executive Committee. A meeting was held at Marlborough House, under the presidency of the Prince of Wales, on December the 20th, at which the Prince of Wales, the Marquis of Salisbury and Earl of Roseberry gave addresses to promote the objects of this most benevolent Association, which has already been of much assistance in aiding cities in their efforts to start sanatoria, notably at York. There is a similar association in France and one in Belgium, doing good work in the same line.

Again, as indicative of the progressive and scientific spirit in this city, in respect to the proposed sanatorium here, it is intended, it appears, to make it an exceptionally model one, especially in its appliances for treatment, with features not yet found in any one institution of the kind. One principal feature, probably, will be, we understand, to as it were intensify the now universally recognized "out-door treatment," by a sort of super-respiration and super-oxidized or ozonized air. Another feature is the provision for all patients to continue under the immediate care or charge of their own physician, or so far as this is mutually desired by patient and physician, which is often of much benefit to the patient.

We make free to suggest that other Canadian cities, even the smaller ones, take up this subject and follow the example of Toronto. Every city should have a well-equipped sanatorium, under the control of its citizens, for its consumptives. A movement started by a few of the leading physicians in each of the various cities would, doubtless, be at once encouraged and assisted by leading citizens generally, as was the case in Toronto, and the great need of such an institution could be made so apparent that the project would eventually be carried to a successful issue.

It is to be hoped that the "National Association" in Canada—a semi-private organization—will rather take pattern from that in England, and not again attempt to obstruct any such movement, as it has done, most unfortunately for itself, in this city.

In Toronto, after a small preliminary meeting of a few persons, in June, a public meeting was convened. At this, a large and representative committee was appointed. This was afterwards increased at another meeting to about four hundred, representing every class and important interest in the city, and nominations were then made for a board of twenty trustees,—ten physicians and ten others, and a president, the Mayor of the city, Mr. John Shaw, two vice-presidents and an honorary treasurer were elected; these four to be ex-officio members of the board; thus making this twenty-four in number. To the Committee of 400, ballot papers were sent, returnable in one week, for the election of the twenty trustees. Eighty-four ballots were returned; a very good

proportion, it was thought, more than half being by citizens who were not physicians, thus showing a decided general public interest, outside of the profession. The trustees then elected an executive of seven members.

For a smaller city, probably a board of ten or twelve, and an executive of four or five would be better. Any further information respecting the organization here would, doubtless, be cheerfully furnished on request by the General Secretary, Dr. Playter, of Toronto.

Before concluding, we desire to draw the attention of municipal authorities to the fact that, it cannot be long before they will be required themselves to make provision for the isolation and treatment of consumptives, as well as for other forms of infectious disease, as at present; consumption being much more fatal and generally prevalent.

Already in Edinburgh, the "Convener of the Public Health Committee of the Town Council" is reported to have said the other day that this very question cannot be delayed. There is a "strong feeling" there, we are told, "in favor of making consumption a notifiable disease." And "the trend of opinion is undoubtedly in the direction of the Municipal Corporation providing hospital accommodation for consumption."

When this comes about, the municipal corporations will not then be able to count on assistance,—donations, etc., from charitable individuals, and the cost to the taxpayers will be quadrupled as compared with what it would be in the case of a simple grant of a small sum to assist those philanthropists who propose with such aid to construct a sanatorium, and this just as much under the control of the citizens, indeed, apparently more so, than if built and operated by the corporation, and at many times over more cost, both in building and operating.

[We regret that for the selection on page 859 of the December issue of LANCET, credit was not given to the New York *Medical Journal*, as should have been done.—ED.]

CHEAP DEGREES.

Dear Editor of LANCET,—

We notice in *Globe* of Toronto, Dec. 3rd, the advertisement under *Medical* heading. "*How become lawful Physicians, Dentists, Education, Graduation, other sciences, Lock Box 500, Chicago.*" Noticing some few months ago in a Buffalo newspaper a similar advertisement we, although the possessor of three M.D. degrees, &c., thoroughly lawful, for fun wrote to *Box 500* to send us full particulars, *for we had been through the 3rd book and had studied medicine for six months and wanted M.D. at once.* The *Western University*, the People's Institute, corner Leavitt and Van Buren Sts., Chicago, replied agreeably.

The Western is incorporated, so was or is the Wisconsin Eclectic Medical College, of which at Chicago, on Congress St., Fred Kirkland, M.D., invited the public to get its degree, M.D., (exposed in full, page 266,

CAN. LANCET, January, 1897). J. H. Randall, Ph.D., M.D., is President and Chancellor of *Western*. Besides giving M.D. one has a choice to get *Bachelor*, *Master* or *Doctor* in some forty or forty-five departments.

The *National University*, of Chicago, of which Harkins is President, grants three grades in 45 departments, and Harkins states that many Chicago divines are possessors of National University degrees.

We urge readers of THE LANCET to address *Box 500* and thus they will learn how *cheap degrees*, M.A., LL.D., D.D., &c., for example, are procured by our ministers the Rev. Drs. in several instances.

National, *Western* and Central University (537 E. Vermont St., Indianapolis,) are flooding the U.S. and Canada—yes, England, with degrees.

Will some one, either through our medical journals or newspapers, assist in exposing such concerns to proper insight.

Yours truly,

Nusgnam, Dec. 5th, 1898. MEDICUS.

THE PATHOLOGICAL SOCIETY OF TORONTO.

TORONTO, December 30th 1898.

PROGRAMME.

1. Malig ant Disease of the Aesophagus.....H. A. BRUCE.
2. A Case of Hypertrophic Cirrhosis of the Liver.....J. E. GRAHAM.
3. A Case of Cirrhosis (Fatty) of the Liver .....H. B. ANDERSON.
4. Intestinal Diverticula.....JOHN CAVEN.
5. Ulcerative Endocarditis Affecting Tricuspid and Mitral Valves.....A. W. McPHEDRAN AND R. D. RUDOLF.
6. Situs Inversus—A Specimen.....W. F. G. WISHART.
7. Multiple Intussusceptions of the Ileum.....H. H. OLDRIGHT.
8. Fibrinous Effusion into Subdural Space .....A. PRIMROSE.
9. Accessory Right Bronchus in a Sheep.....J. T. FOTHERINGHAM.
10. Eustrongylus Gigas—in Kidney of Mink.....F. N. G. STARR.
11. Skiagraph—Gunshot Wound of Foot—Specim n from Fatal Gunshot Wound.....G. SILVERTHORN.
12. Rodent Ulcer at Edge of Orbit.....WM. OLDRIGHT.
13. "*a*." Cerebral Softening following Injury .....
    "*b*" Pachymeningitis Hemorrhagica Interna .....
    "*c*." Ruptured Uterus .....
    "*d*." Fractured Pelvis .....
    H. B. ANDERSON.
14. Fibroma Uteri, with Hemorrhages from Twist of Pedicle I. H. CAMERON AND J. T. FOTHERINGHAM.

J. T. FOTHERINGHAM, *Corresponding Secretary.*

DIET TABLE.

BRIGHT'S DISEASE.

FISH.

Raw oysters, raw clams, fresh fish.

MEATS.

Beef, mutton, chicken game, salads.

BREAD AND FARINACEOUS ARTICLES.

Good bread, hominy, wheaten grits, rice, toast, oatmeal, gruel.

VEGETABLES.

Green vegetables generally, spinach, summer cabbage, turnip tops, water-cresses, lettuce, mushrooms, celery.

DESSERTS.

Rice and milk puddings.

FRUITS.

All laxative fruits.

LIQUIDS.

Water abundantly, Poland, Buffalo Lithia, or Vichy water, hot water, milk, skimmed milk, buttermilk.

AVOID.

Soups, fried fish, cooked oysters, pork, corned beef, veal, hashes, stews, turkey, heavy bread, batter cakes, potatoes, gravies, lamb, peas, beans.

All made dishes, puddings (except as allowed above), pies, cake, ice-cream, all saccharine dishes and starchy foods, except as allowed. All spices and highly seasoned dishes. Alcoholic drinks, malt liquors, coffee, tobacco.

CHOLERA INFANTUM.

Scraped beef or mutton.

Mutton and chicken broth, barley, gruel prepared by long boiling, sago, tapioca.

Flour ball: Wheat flour closely packed in a bag, boiled five days, then grated and sifted, and given with boiled milk. Arrowroot and barley flour may be prepared and given in same way.

White of egg and water, expressed juice of meat for infants above the age of six months, whey, brandy.

Pure water abundantly, fresh-boiled milk, plain soda or Vichy water.

In some cases avoid milk entirely; use rice-water. Feed at regular and long intervals as possible (two to six hours), according to age. Give small quantities. Always use stimulants freely.

AVOID.

Milk, except that which has been sterilized or boiled, and starchy substances, except as allowed, and unless the starch has been changed into dextrin by the action of dry heat.

Saunders.

FORMULA FOR BRONCHITIS.

℞ Tincturæ belladonnæ foliorum.....f℥ss
Acidi hydrocyanici diluti.....♏xxiv
Syrupi ipecacuanhæ.....f℥ij
Spiritus chloroformi.....f℥ij
Potassii citratis.....℥ij
Syrupi lactucarii.....f℥j
Aquæ.....q. s. ad f℥iij
Misce.
Sig.—Teaspoonful in water every two hours.
Indication.—Used in early stage with excessive cough.

℞ Codeinæ.....gr. ij
Ammonii chloridi.....℥ij
Ammonii bromidi.....℥j
Antimonii et potassii tartratis.....gr. j
Olei anisi.....gtt. ij
Extracti glycyrrhizæ.....℥j
Tragacanthæ.....gr. xij
Misce et fiant trochisci No. xxiv.
Sig.—One lozenge every four hours.
Indication.—Used during subacute stage to liquify secretion.

℞ Hydrargyri chloridi mitis.....gr. j
Sacchari lactis.....gr. x
Alcohol.....q.s.
Misce. Fiant tabellæ triturationes No. vi.
Sig.—One tablet every hour.
Indication.—Initial treatment in early stage.

℞ Syrupi ipecacuanhæ.....f℥iv
Potassii citratis.....℥ij
Syrupi limonis.....f℥iv
Aquæ.....q. s. ad f℥iij
Misce.
Sig.—Teaspoonful every four hours.
Indication.—Used in early stage to establish secretion.

℞ Codeinæ sulphatis.....gr. vj
Syrupi ipecacuanhæ.....f℥ij
Spiritus ætheris nitrosi.....f℥ij
Syrupi limonis.....f℥iv
Liquoris potassii citratis.....q. s. ad f℥iij
Misce.
Sig.—Teaspoonful every two or three hours.
Indication.—In early stage with excessive cough.

—*Lea Bros. Book of Formula.*

HYDROCEPHALUS, ACQUIRED.

ETIOLOGY.—It is probable that the most frequent causes of obstruction in cases of chronic hydrocephalus are simple fibrous closure of the foramen of Magendie, adhesion of the surfaces of the tonsils of the cerebellum to each other and to the margin of the fourth ventricle, and the presence of cysts between the arachnoid and pia at the postero-inferior aspect of the cerebellum.

TREATMENT.—A case of acquired hydrocephalus was operated on and drainage established through the fourth ventricle. The trephine was applied to the occipital bone in the mesial line a little above the foramen magnum; although the skull is particularly thick at this point, and the sinus in the falx cerebelli requires to be ligated, this is the easiest and most satisfactory approach to the fourth ventricle. The accumulation of cerebrospinal fluid in this case was due to adhesions between the two tonsils of the cerebellum and the sides of the medulla, the separation of which was followed by the escape of the imprisoned fluid. In the subsequent course of the case a large quantity of cerebrospinal fluid escaped daily from the wound. The operation is one that should be given trial in cases of chronic basic meningitis of both the tuberculous and non-tuberculous varieties. Bruce and Stiles (*Scottish Med. and Surg. Jour., March, '98,*)

ABDOMINAL SECTION.—Intestinal paralysis or obstruction is more often the cause of fatal sepsis, either wholly or in part, than *vice versa*, in many cases the septic matter finding its way through the stretched intestinal walls. Exposure of the peritoneum, handling of the viscera, production of raw surfaces, and leaving dead matter (bloody oozing and *débris*) are followed by intestinal adhesions in from 12 to 36 hours, and these adhesions produce more or less intestinal paralysis and sometimes obstruction. On the day before a peritoneal section, the patient should be purged sufficiently to reduce the gaseous distension of the intestinal coils (that they may be kept out of the way during the operation), obtaining as many as six or eight large stools, while patients of relaxed fibre should receive full doses of strychnine from the time they come under observation. Two hours before the operation 2 teaspoonfuls of the fluid extract of cascara are given. Immediately on awaking from the anæsthetic the patient receives a drachm of magnesium sulphate every hour; at the end of six hours a stimulating enema is administered and repeated till gas passes between enemas; then the saline is discontinued. In simple operations where undue haste is not necessary the salines and enemas are given a little later. The author presents as presumptive proof of the value of this method a record of 105 consecutive recoveries after peritoneal sections since its adoption.—H. T. Byford, *Amer. Jour. of Obstet.*, July 1, '98.

SUBSTITUTIONS IN PRESCRIPTIONS.—We have been much amused at the lengthy and forceful editorials in exchanges with reference to the pernicious habit of some pharmacists who have not the article prescribed in stock, but have something "just as good," or "even better," which they substitute. There is no pharmacist so obtuse as not to know that the change of any article in a prescription without the full consent of the prescriber is cheating. "I asked for bread and you give me a stone." What is the use of moralizing with intentionally dishonest people? Nothing can be done with such cheats except the force of the law. This writing all round a subject has no effect; let the guilty parties be exposed, and thus be brought to the bar of public disgust

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OVARIAN SERUM THERAPY.—By experiments upon animals Ferré and Bestion find that ovarian extract is less toxic in its action upon normal females than upon males or pregnant or castrated females or young females in whom the ovaries have not begun to functionate. In healthy adult females a tolerance seems to have been established. The authors call attention, in view of these observations, to the advisability of administering ovarian extract with caution to pregnant women and those in whom a natural or artificial menopause has occurred. Bestion de Camboulas has noted improvement under this treatment in four cases of troubles following castration, and in cases of chlorosis with amenorrhea the menses reappeared and the general condition was greatly ameliorated. Etienne and J. Demange believe that chlorosis is due to insufficient ovarian secretion, and so consider the administration of ovarian extract logical treatment. Seventeen clinical cases observed appear to bear out this opinion. As some other organic substances seem to relieve chlorosis, it is possible that they might be substituted. A. Gilbert and P. Carnot have found ovarian extract efficacious for troubles following castration, and somewhat less so after castration, rarely after genital affections. Its value in chlorosis is considered unproved.

DANGERS OF LUMBAR PUNCTURE.—The usually harmless lumbar puncture may lead to fatal results in persons with abnormal cerebral vascularization, the same as a cranial injury on a normal person produces a bulbar shock for a moment, which soon passes away, while the same shock in a pathologic condition may entail the most serious consequences. *Le Lyon Med.* reports the case of a syphilitic with abrupt, complete paraplegia, resisting all treatment for two years, when Jaboulay resolved to try lumbar puncture. Ether; 20 c.c., of a clear fluid escaped, and 10 c.c. of a 5 per cent solution of iodin were injected. While the patient was still half drowsy from the anesthetic, the respiration suddenly ceased, although the heart and pulse were beating regularly and there was no marked cyanosis. In spite of artificial respiration, traction of the tongue, etc., it was impossible to re-establish normal respiration, although the heart and pulse action continued normally for over an hour and did not finally cease for an hour and a half. The necropsy disclosed generalized syphilitic myelitis, with a softened focus in the left brain, no alteration noted in the medulla, liver or heart, but multiple syphilitic gummata in the right kidney.—*Presse Med*, November 19.

TOOTHACHE:

℞ Carbolic Acid.....2 drachms.
Menthol (Crystals).....½ drachm.
Camphor Gum.....2 drachms.
Morphine.....20 grains.

M. Clean the tooth out with a small wad of cotton, then wet a small wad of cotton with the mixture, force it down into the bottom of the cavity, and fill the same with dry cotton. Pain ceases in a few minutes, and if the cavity is kept packed with raw cotton, changing it every two or three days for three weeks, it will kill the nerve.—BRODNAX, in *Medical Brief.*

RADICAL CURE OF MAL PERFORANS.—Chipault has cured twelve out of fourteen cases by stretching the nerve, followed by cleaning out the ulceration, removing all necrotic bone and horny edges, concluding with an aseptic bandage. All were cured, but two relapsed (four months to three years). The nerve should be stretched not too far from the spot, and still not too near. Nine times it was the nervi plant. int. and ext.; once the plant. int. alone; once the collateralis int. of the great toe, and three times the saphenous ext. at the edge of the Achilles tendon. The nerve is stretched with the finger or a forceps, principally towards the distal end. He noted in the etiology: tabes, diabetes, syringomyelia and alcoholism. The evacuation of the ulcer alone will not cure, but stretching the nerve alone will accomplish it, though much more slowly. He believes that stretching the nerve is also applicable to tumors on amputation stumps, and zoster eruptions, as well as to other cutaneous affections with a nervous basis.—*Cbl. f. Chir.*, November 19.

THE RADICAL CURE OF HERNIA.—At the Académie de Médicine, M. Lannelongue presented some children on whom he had a year ago practised his operation for the radical treatment of hernia. The success was conclusive. Since that time he had treated a certain number of other patients, with the following results:—Out of 44 young subjects, whose ages ranged from four months to twenty years, he obtained 41 cures. Of the three unsuccessful cases, one was operated on a second time and cured; another belonged to that class of hernia which did not admit of the treatment by chloride of zinc, while the third was that of a half imbecile patient who insisted on getting up the day following the operation. Of five cases in persons of from 20 to 60 years of age, some of whom presented double hernias, all were cured.

In referring to the mode of operating, the speaker said that care should be taken not to inject the chloride of zinc into the peritoneum or wound the spermatic cord. The first accident could be avoided by having an assistant place his fingers on the peritoneal orifice of the inguinal canal, and the second by drawing down the cord with the index at the moment of making the injections. He generally made two or three injections inside and outside the cord, each injection containing 10 to 12 drops of the chloride of zinc solution at one in ten. As the injections were frequently painful, chloroform should be given. The patients should keep the bed with a slight compressive bandage for three days.

THE MODERN DOCTOR.

When Galen made his pretty pills
To cure all sorts of human ills,
And felt the pulse to see if he
Could well apply the remedy,
He little thought, this man so great,
What was to be the doctor's fate.
"Down with the scab" or "hang the lout"
The cry sent up with every shout,
When work is scarce and workmen "sweat"
Their life blood for their bread to get,
Does not apply the doctor to,
So these men say, "What's he to do?"
To be a man? and flout the crew
Who cut him down like any Jew?
Oh! no, he crawls and licks their feet
Like hungry dogs loose in the street.
He scrapes and fawns for every crumb,
Yet in his owner's service dumb,
And thanks them humbly for his dole
While he scarce calls his own his soul.
The doctor may the toxin find
And "give" the remedy to mankind:
May chloroform and ether see
Prevents the pang of agony:
And ceaseless strive for human good
As no man else e'er could or would.
All these he found for human weal
Nor makes for gain the least appeal,
No patent covers his discovery,
It's given to all poor sufferers free,
It's not hung up by the poor "leech"
Out of any human being's reach.
If pain is added to man's woes
He straight into the hospital goes,
But what is that to men who set
This motto up, "Let *others* sweat"!
Their sisters too, in so'emn clave,
Resolve to make the Doctor slave.
They run around and find one who,
Poor soul, has little e'se to do,
Straightway they play the game of bluff
Unless he's made of sterner stuff.
And when they want a man of skill
They take another doctor's pill,
Meanwhile he runs till they get well
And finds at last his doom is h—l.

—TIPLIN, from Bobcaygeon *Independent* of Dec. 30th, 1898.

HOW TO PREVENT COUGHING.—It is "going the rounds" that a doctor, by the promise of rewards and punishments, succeeded ininducing children in a hospital ward to simply hold their breath when tempted to cough, and in a little while he was surprised to see how some of the children entirely recovered from the habit. Constant coughing is precisely like scratching a wound on the body; so long as it is done the wound will not heal Let a person, when tempted to cough, draw a long breath and hold it until it warms and soothes every air cell, and some benefit will soon be received from this process.

Book Reviews.

A TEXT-BOOK OF OBSTETRICS, by B. C. Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. 653 illustrations; 846 pages. Philadelphia, W. B. Saunders; Toronto, J A. Carveth & Co 1898.

This work impresses the reader most favorably. From the bibliopegic point of view it is excellent, the illustrations are very good and new, and the m chanical work well executed throughout. The author's part, too has been admirably well done. One of the outstanding merits of the book, from the student's point of view, is the fullness and yet compendiousness with which it covers the medical side of the subject, the diseases of the pregnant woman and the new born infant. The parts into which the work is divided are seven—pregnancy (anatomy, physiology and pathology); the physiology and management of labor and of the puerperium; the mechanism of labor; the pathology of labor; the pathology of the puerperium; obstetric operations; and the new-born infant. One chapter particularly worthy of note is that on the signs of pregnancy—the best resumé of the subject which we remember having seen. The pages (124) devoted to the treatment of anom lies in the forces of labor are, while brief, most exhaustive in the treatment of the various most important conditions causing delay in delivery The author speaks decidedly in favor of the Walcher position in contracted pelvis. It may be noted that the author's remarks upon the value of anæsthetics in labor, as indeed upon all obstetrical subjects, are marked by a moderation and reasonableness which are always the mark of sound scholarship. The work, if generally adopted as a text-book, as it should be, will do much to advance obstetric practice on this continent.

A TEXT-BOOK OF PATHOLOGY, by Alfred Stengel, M.D., Instructor in Clinical Medicine in the University of Pennsylvania etc. 372 illustrations; pp. 848. Phila.: W. B. Saunders. Toronto: J. A. Carveth & Co. Cloth, $4.00 net; half-morocco, $5.00 net.

This is a very concise, practical, well gotten-up work. It bears evidence of its American authorship on almost every page in the abbreviated and modernized form given to many of the scientific terms of Greek and Latin origin, a tendency with which the reader, whose primary and literary training has been adequate, cannot sympathize. As a compendium of information the work is worthy of confidence. One is pleased to see adequate mention made of the *gas bacillus, B. arroques capsentatus*, under the head of infectious emphysema. The usual division of the subject into General and Special Pathology is followed. The excellent and vigorously systematic treatment of each subject under the latter head is particularly praiseworthy. As an example, each portion of the respiratory system, say the trachea, is taken up in the same order—Malformations, Congenital and Acquired; Circulatory Disturbances, Inflammations, Infectious Diseases, Tumours. The references to malformations strike the practical reader as being of great interest and are more conveniently placed in this work than in any we have yet seen.

INTERNATIONAL CLINICS: A quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology Obstetrics, Ophthalmology Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M D, (Univ. of Penna), Philadelphia; J Mitchell Bruce, M.D., F.R C.P., London England; David W. Finlay, M.D., F.R.C P., Aberdeen. Scotland. Volume II., eighth series, 1898, Philadelphia: J. B. Lippincott Company. 1898, also Vol. III., eighth series. Oct. 1898.

Volume II. and III. of the eighth series of these excellent clinics well maintain the high standard set in previous volumes. Among the contributors are such well-known clinicians as Prof Von Jasch, N. Senn. W. W. Keen, Peance Gould Alex. M. Phedson, T. Pickering Pick, Paul F. Munde, Lauder Brunton, James Andies and others. The subjects chosen are so varied and eminently practical that the clinics must prove of great value to the general practitioner by keeping him in touch with the hospital experiences of the leading clinicians in all parts of the world.

The editors and publishers are to be congratulated on placing before the profession such a storehouse of up to-date, useful information.

NERVES AND FOOD.—Sir Henry Thompson, writing in the *Nineteenth Century*, makes the following remarks upon the altered diet which has become necessary, owing to the extraordinary changes affecting man in every rank of life and his surroundings in all parts of the civilized world, which have taken place during the last sixty years. "It is difficult—perhaps impossible—for the present generation to realize the contrast presented in respect of the demand now made on man's activity, especially that of his brain, during, say, the last thirty or forty years, with that which was required by the routine of life as it was in the 'thirties.' The wear and tear of existence has enormously increased, and the demand for rapid action and intense exertion by the nervous system is certainly tenfold greater now, to make a moderate estimate, than it was then. A railway appeared in the first year of the decade named; the penny post and the electric telegraph not until its close; while the press, both daily and weekly, now gigantic, was then, by comparison, insignificant and diminutive. For the great majority, even of business men, life was tranquil and leisure plentiful, while competition was almost unknown; I need not attempt to describe what it is now. Such changes have naturally been the cause of permanent injury to many whose powers sufficed for the quiet time, but gave way in large and increasing number under the inevitable struggle which issues in 'the survival of the fittest.' The necessary result of this extreme demand for brain activity, since that organ is the sole source of energy on which all the functions of the body, including that of digestion, depend, is an insufficient supply for this important process. Under these circumstances nothing can be more important than to provide food of a kind and in a form which will economise the work of the stomach. It must not be bulky; much of it may be advantageously soluble in form so as to be rapidly and easily assimilated, even pre-digested sometimes, and when solid not requiring much mastication. I have found nothing which fulfils these conditions so completely as the various concentrated extracts of meat which are now so extensively used. A teaspoonful of sound beef-extract in a breakfast-cup of hot water, when the brain is fatigued and the stomach unfit for work, is often the best antidote possible, reinvigorates the system, and prepares it for a light meal or for a little more work, as the case may be—a result far too frequently sought through the pernicious habit of obtaining temporary relief in a glass of wine or spirit."

Dr. Sherman writes of protonuclein: My first practical experience with protonuclein was on myself. About two and a half years ago I was taken with a severe attack of acute catarrhal inflammation of the nasal mucous membrane which rapidly extended down the trachea into the bronchi. It began on a Friday morning with an almost incessant sneezing, accompanied by blocking of the nose, fullness in the head and headache, followed later in the day by a thin, copious discharge from the nose, and an irritating cough. By 5 o'clock p.m. the same day my headache was severe, my limbs all ached, and, on taking my temperature, it registered 101°. I had had similar attacks before, none apparently quite

so severe, which always run a course of from one to three weeks. I had tried quinine and other remedies without any appreciable benefit, and was a willing subject to try something new. I had a few samples of protonuclein and began to take them *ad libitum*, starting about 5 o'clock in the evening. By Saturday morning I felt some better and continued taking the preparation through all that day, still *ad libitum*, and by evening, twenty-four hours after I began its use, felt considerably improved. I continued taking more during Sunday, when my nose cleared up, and the headache, fever, cough and soreness in my limbs disappeared. By Monday evening, after three days' treatment, I was practically well and attended a meeting of the Detroit Medical and Library Association. Since then I have always prescribed protonuclein in these acute catarrhal affections with the same happy result Experience has taught me that the proper dose for such cases, in the adult, is from six to twelve grains repeated every two to three hours. The treatment should be continued with smaller doses for a few days after the disease has disappeared to prevent a relapse.

I have found protonuclein especially useful in the treatment of bronchopneumonia in infants and children. In these cases I usually give from two to four grains, according to age, repeated every two to three hours. and find that a recovery takes place in from three to five days. I have had remarkable success in treating pneumonia with this preparation and will briefly report one case.

My mother, aged seventy-two years, on April 8, 1897, suffered a severe chill about 9 o'clock in the evening. Two hours later when I first saw her she complained of pain in the right side; was coughing up bloody mucus, and was very uneasy. Her heart had been irregular for some years, but now the pulse was 130 and her temperature 103°. Physical examination revealed pneumonia of the right lung. I prescribed two grains of phenacetin and six grains of protonuclein to be repeated every two hours. By 10 o'clock the next day her temperature was 99 3-5° and her pulse 108; the pain in her side was less and she felt much better. The phenacetin was discontinued and the protonuclein continued. By the third day her temperature was normal and she felt so well that, in spite of my protests, she was determined to sit up. She coughed up rust-colored sputum for six or seven days, but otherwise felt quite well. She has had no trouble with her lungs since.

Protonuclein has a wonderful effect in maintaining the spirits and vitality of a patient during fever and has no depressing effect, while it reduces the temperature. This is particularly noticeable in typhoid cases. They do not lapse into that stupid condition which is so characteristic of this disease.

When protonuclein is taken in large doses, say ten to fifteen grains repeated every two or three hours, it produces a deafness and ringing in the ears very similar to that produced by large doses of quinine. In such doses it may also cause an unsteadiness of the nerves and an increased frequency of the heart's action. If this condition is observed during the treatment of a disease it is well to withhold a few doses, when these symptoms will readily disappear without leaving any bad effects.

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THE USE OF HYDRAULIC PRESSURE IN GENITO-URINARY PRACTICE.

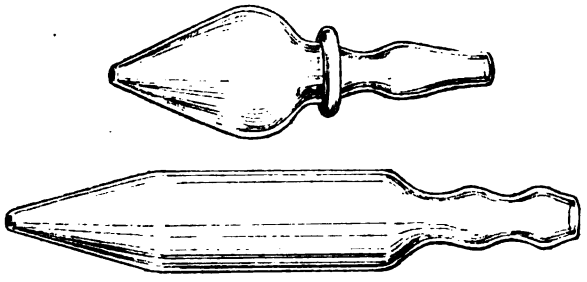
WITH ESPECIAL REFERENCE TO CONTRACTURE OF THE BLADDER.

Abstract of Article, Johns Hopkins Hospital, Baltimore.

By HUGH H. YOUNG, A.M., M.D.,
Assistant Resident Surgeon, Johns Hopkins Hospital.

About 1885 Dr. Halsted began treating cystitis by intravesical irrigations—forced in by hydraulic pressure without the use of a catheter. He had found that the bladder could be irrigated in this way while using the copious irrigation treatment for gonorrhea which he introduced at the Roosevelt Dispensary, and which has since been so widely adopted.

Many cases of cystitis have been treated at the Johns Hopkins Hospital by this method with very satisfactory results, Dr. Halsted's acorn nozzle, such as is used for urethral irrigations, being held tight in the meatus while the irrigating bag was elevated sufficiently to force the solution into the bladder. We are now using a longer nozzle with more gradual conical point which we devised especially for intravesical irrigations, and it has proved very satisfactory.



During the summer of 1896, a patient was admitted to the hospital suffering with chronic cystitis and very frequent micturition. Examination showed that his bladder was greatly contracted, holding only about 40 c.c. (℥i). After intravesical injections were begun it occurred to me that it might be possible to dilate the bladder by hydraulic pressure and thus lessen the disagreeable frequency of micturition.

At first only 40 c.c. could be forced in, but the capacity soon began to increase and at the end of ten days the bladder held 150 c.c. and the

acts of micturition were not nearly so frequent. Unfortunately I was prevented from continuing the treatment longer, though the results were very promising. The next case, however, demonstrated to a certainty the value of the method.

CASE I.—J. H., aged 65, admitted December 17, 1896, complaining of constant dribbling of urine, chronic cystitis of 30 years' standing, following rupture of the urethra, operation, etc. Cystitis became greatly aggravated six years ago, frequency of micturition increased and for the past three years has dribbled constantly—patient wearing cloths between the legs to absorb it. On examination, the bladder was found to hold only 30 c.c. (℥1), urine ammoniacal, full of pus and mucus. Intravesical irrigations begun, hydraulic pressure maintained as long as patient could stand the pain it produced. The tabulation shows the progress of dilatation.

CASE I.—J. H. CYSTITIS, THIRTY YEARS' DURATION.

DATE.	Day of Treatment.	CAPACITY OF BLADDER. Largest am't held on forced distention.	INTERVAL. Longest time between two urinations.		REMARKS.
			Hr.	Min.	
Dec. 17		30 c. c.	Drib	bling.	Admission, urine ammoniacal, loaded with pus and mucus. Constant dribbling. Clothes saturated with urine.
" 26					Dilatation begun. Bichloride, 1 to 150,000, and Boracic acid, 2 per cent. b. i. d.
" 27	1	40		"	Urine clearer. Reaction less alkaline. Still dribbles.
" 30	4	90		"	
Jan. 6	11	200		"	Reaction acid. Great general improvement.
" 11	16	240		30	Has ceased to dribble. Urine voided every 30 minutes.
" 16	21	245	1		Bladder unable to expel all urine. Sixty c.c. residual. At times voids 16 c.c. naturally. Urine acid. Pus slight.
" 23	28	255	1	30	Treatment discontinued.
" 24					
Feb. 20		215			Treatment resumed (after a month). Urine again alkaline, voided at frequent intervals. Bladder about same size.
" 27	7	230			Bladder has been dilated from 30 to 230 c.c. Cystitis greatly improved. Dribbling ceased.
Mar. 6	14	280	3		Bladder, however, has very little "tone." The muscle has probably been largely replaced by fibrous tissue. At present there is a residual of 60 to 100 c.c. Great general improvement.

CASE II.—J. T., aged 41, admitted March 26, 1897, complaining of painful and frequent micturition, chronic cystitis ten years. Voids urine generally every fifteen minutes. Suffers constant pain in bladder. Passes large amounts of blood. Examination. Bladder holds 30 c.c. (℥ 1). Urine passed every 20 or 30 minutes. Alkaline, full of blood and pus. Dilatation treatment. Boric acid or Thompson's fluid irrigations without catheter four times daily. Chart shows progress.

CASE II.—J. T. CYSTITIS TEN YEARS' DURATION.

DATE.	Day of Treatment.	BLADDER CAPACITY. Largest am't held on forced distention.	URINE. Largest am't voided at one time.	INTERVAL. Longest time between two urinations. Hrs.	Min.	REMARKS.
May 26			30 c.c.		30	Admitted. Urine loaded with pus and blood, reaction alkaline. Great pain in bladder constantly present.
June 3	1	40 c.c.	30		30	Dilatation four times daily begun.
" 8	5	60	40	1	15	
" 11	8	85	70	1	40	General health improved. Pain now absent. Urine clearer.
" 18	15	105	80	2		Has gained 8½ lbs. in weight.
" 25	25	130	110	2	30	Patient greatly improved. Discharged, to continue treatment at home.
July 14		100	80	2		Home treatment has lost ground somewhat.
" 23		135	100	3		
" 29		160	130	4		No more blood or mucus, free from pain, feels like a new man.
Aug. 10		180		4		
Sept. 23						Irrigations have been discontinued by patient contrary to orders for more than a month. He writes that he still holds his urine three or four hours. He has no pain; is very well.

CASE III.—G. L. CYSTITIS, SIX YEARS' DURATION.

DATE.	Day of Treatment.	BLADDER CAPACITY. Largest am't held on forced dilatation.	URINE. Largest am't voided at one time.	INTERVAL. Longest time between two urinations. Hrs.	Min.	REMARKS.
May 30			60 c.c.		45	Admitted. Suffers with severe pain in bladder. Urine voided generally every half hour. Acid, pus and blood.
June 5	1	80	60 c.c.	1	10	Systematic dilatation begun. Thompson's fluid, four times daily, given by patient himself.
" 8	3	110				
" 10	5	130	90	2	5	Almost free from pain. Feels greatly improved.
" 18	13	160	120	2	35	
" 23	18	180	160	2	55	
" 27	22	195	180	3	30	Cystitis greatly improved. Diarrhœa and pain in prostate pretty bad. Feels greatly relieved. Discharged to continue treatment at home. One month later wrote that he was doing well—nothing heard since.
						The symptoms of painful and frequent micturition are entirely relieved. Nothing more than alleviation could be expected.

CASE III.—G. L., aged 28, Old Pott's disease, cystitis six years' duration. Urine voided every 30 or 40 minutes. Bladder contracted, holds

only 60 c.c. Urine acid, much pus and blood. Chronic diarrhea with mucous and blood, very tender rough prostate. Reacts to injection of tuberculine. (Probably has tuberculosis of prostate and intestine, manifestly little hope of permanent relief.) Forced dilatation without catheter was followed by surprisingly satisfactory results, as shown in table.

CASE IV.—G. B. CYSTITIS, FOURTEEN YEARS' DURATION.

DATE.	Day of Treatment.	BLADDER CAPACITY. Largest am't held on forced distention.	URINE. Largest am't voided at one time.	INTERVAL. Longest time between two urinations.		REMARKS.
		c.c.	c.c.	Hrs.	Min.	
May 3			20		15	Admitted. Severe pain in bladder and penis. Urine filled with blood, pus and mucus. Strongly *ammoniacal*. Wears rubber urinal. Has voided urine every fifteen minutes for two years.
" 5		22	20		15	Dilatation begun every four hours. Thompson's fluid.
" 8	3	50	20		18	Injected with tuberculine. No reaction.
" 15	10	94	40		25	
" 21	16	115	70		45	Improvement has been rapid. Pain entirely gone. Appetite ravenous. One irrigation, silver nitrate, 1 to 400, daily, followed by Thompson's fluid
" 29	25	130	105	1	10	Urine *acid*. Very little sediment.
June 10	37	170	120	2	10	No blood.
" 20	47	190	155	3		Urine acid.
" 29	56	250	190	4	25	Feels like a new man. Can now walk about town for four hours without desiring to urinate—is entirely free from pain. Urine is almost clear. Acid in reaction. Discharged to continue dilatation at home.
July 15		225	150	3	35	Home treatment. Lost ground while travelling.
" 21		275	190	3	30	
" 29		340	260	5	30	
Aug. 9		370	260	6		
Sept. 30		365	280	4	30	There is still some pus in urine, but patient feels perfectly well.

CASE IV.—G. B., aged 40, chronic cystitis (following gonorrhea), of fourteen years' duration. Great frequency of micturition, has voided urine every ten to fifteen minutes for two years, both day and night. Wears a urinal by day. Suffers severe pain in bladder, incapacitating him for work. Is perfectly miserable. Examination. Bladder holds only 20 c.c. naturally, and on forced painful distention only 22 c.c. Prostate not enlarged. Urine strongly alkaline, large clot of mucus, also blood. Table shows improvement under dilatation.

It is now five months since patient entered hospital with one of the worst cases of cystitis I ever saw. He is now devoid of all symptoms of cystitis except presence of pus, which is often present for years after apparent cure of cystitis.

When great intravesical pressure is exerted will any of the fluid pass up the ureters and thus cause dangerous infections of the kidneys? That this does not occur I have found by forcing nearly two quarts of a solution of methylene blue into the bladder of a cadaver, and find, on section, the ureters nowhere stained by the solution, while the bladder was a deep blue color. In none of the cases treated has there been any evidence of ascending infection.

It is easy to irrigate the bladder without a catheter through very tight strictures, and in cases of very large prostate. In a case of extra-dural abscess with tight stricture and very difficult micturition, I was able to dilate stricture considerably and greatly relieve difficulty of micturition by simple irrigations with hydraulic pressure of seven feet.

The possibility of benefiting an atonic bladder by alternate distention and evacuation—a form of massage, so to speak, for the weakened muscle, is shown in two cases, both recovering from paraplegia, one bladder distended and requiring catheterization, the other contracted and dribbling, both regaining power of voluntary control and power of expulsion after a few weeks' treatment.

Technique of Irrigating Bladder without Catheter.—Articles used: A fountain syringe with eight foot tube, a short conical nozzle. (Hynson & Westcott, Baltimore, have kindly offered to keep in stock the nozzles made for me.) A pole or other apparatus for elevating or lowering the irrigating bag, oil cloth and tin basin. Technique: Patient on back; oil cloth over bed or lounge; small basin between thighs. Take penis in left hand, retract foreskin, let fluid play on glans penis, then back and

forth in urethra to cleanse it. Then crowd tightly into meatus, holding penis behind corona between thumb and index finger. Raise bag to seven feet. When sphincter gives way and fluid begins to flow into bladder, lower bag to five feet, and (in cases of contracture of bladder), continue to force fluid into bladder until considerable pain is felt by patient, then withdraw nozzle and allow fluid to be voided. In most of my cases the patients conduct their own irrigations, often unassisted.

Solutions used: Bland fluids are most satisfactory. Thompson's fluid or boraci acid, two per cent. being the best, given four or five times daily, one quart each time. It is well to use once daily a stronger antiseptic solution, e.g., silver nitrate 1 to 500, or bichloride of mercury, 1 to 150,000, to be washed out by boric acid or Thompson's. No internal treatment except citrate of potash where urine is very acid.

The effect of forced dilatation is probably as follows:

The individual bundles of contracted fibrous tissues are separated or loosened, allowing increased vascularity. Folds and pockets of mucous membrane are smoothed out, irritating secretions washed away. Ulcers are stretched and cracked as external ones are by scarification, allowing new blood vessels to grow out. The bladder muscle is exercised, its tone restored. The mucous membrane cleaned, stretched and newly vascularized, is given a chance to throw off the inflammation.

One of the most striking features of the treatment is the rapidity with which they improve. Pain present for years may disappear in a few days, pus and mucus rapidly decrease, and strongly ammoniacal urine may become acid in a short while. The relief afforded makes them the most grateful patients I have ever seen. And yet, one of the latest text-books on Genito-Urinary Surgery says: The theory that the capacity of an inflamed bladder can be increased by dilatation is contrary to physiology and anatomy. To attempt by forced injections to relieve frequent micturition cannot be too strongly condemned.

NEURALGIA—

℞ Menthol,
Guaiacol ..... āā 1
Spt. vini rect. absol 18
M. S. Apply on cotton two or three times daily.

VAGINISMUS AND VAGINITIS—

℞ Ol. eucalypti ..... ℥ iij.
Ceræ albæ,
Olei theobromatis ..... āā ad ℥ iij.
M. Div. in supposit. No. iv. (bougie-shaped).

—LUTAUD, *Jour. de Méd.*

THE WAR AGAINST TUBERCULOSIS IN PARIS.

BY EDWARD CONNER.

The Paris Congress recently held on the subject of tuberculosis, phthisis, or consumption has not very much advanced any definite solution for this terrible disease. But there has been no putting back of the best trend we know for dealing with the malady—the persistent application of hygienic rules. That is the scientific study of the problem. The disease is widespread, and as infinite in its diagnoses as the afflicted themselves. At present climate enters as an important factor in the treatment of consumption, that is to say, of the action of pure air and light, as well as compliance with a treatment based on the results of such an acquired experience. It is upon these principles that the sanitoria now springing up on the continent in elevated districts have been founded. Not that sanitoria cannot be established in the plains, if the exceptional conditions be secured and followed up. Indeed, in Germany the sanitoria were commenced upon the lowlands, when the question naturally suggested itself: "Why not try the quieter uplands, which are freer from fogs, mists, low air currents, and a heavy percentage of atmospheric impurities?" Hence the origin of treating tuberculosis by altitude, that is, at heights between 1,400 and 2,000 yards above the level of the sea. The results have been very encouraging, but do not as yet constitute a perfect cure. The method has enabled us to measure facts, as well as to study the action of mountain air on the organs, to note if all the organisms are affected in the same manner, and ought they to submit to the same treatment.

All medicated substances, all therapeutic methods applied to tuberculosis appear to have failed so far. Science, by antiseptics to render the constitution refractory to the development of the bacillus, has yielded no precise result. We still await the medicament which without destroying the organism will attack the pathogenic microbe in the recesses of the tissues, or the serum that will oppose its invading march, render it inoffensive, and eliminate it from our system. France has three sanitoria for the treatment of tuberculosis — Berck-sur-Mer, Villers-sur-Marne, and Ormesson. The latter is viewed as the model establishment; it is situated at nearly twenty miles from Paris, belongs to the municipality, and is the place where tuberculous children aged from 3 to 12 years are sent to be treated. It can accommodate 120 patients. But it is situated relatively in a plain. The establishments of Ruppertshain, near Frankfort-on-the-Main, and of Davos and Heiligenshuendi, belonging to Basle and Berne in Switzerland, are recognized as the typical sanitoria. Consumption in its first or early stage holds out every chance of being successfully treated, but later developments of the disease are hazardous. Further, no sanitorium accepts incurable cases. Under these unlike conditions, it is difficult to draw a common conclusion. One feature is peculiar to all the consumptive establishments, they are worked upon hygienic principles, be their

altitude high or low. Ormesson is in the plain of Paris, and its director, M. Blache, recently communicated to the Academy of Medicine, that 42 per cent. of the children admitted were cured, having received no other medicaments but healthy food, the advantages of the purest air, and hygienic accessories.

Near Frankfort-on-the-Main is the Ruppertshain establishment—the rich model of the sanitoria. Its altitude is 418 yards above the sea level. The bedrooms allow 44 cubic yards of air per patient, contain 1, 3 or 5 beds; are situated in the front of the building, while the latter has a S.S.E. aspect. The beds are in iron; the windows which have Venetian shutters are kept partially open at night, and fully so all day. The patients from 7 a.m. to 9 p.m. remain in a common hall or gallery called the Liege-Halle, which is kept wholly open to the fresh air, but which not the less excludes draughts. Steam heats the premises, and petroleum supplies the light. The water-closets are worked by peat and are daily emptied, the contents of which are used to fertilize fields; the slush water and drainage are disposed of similarly. A steam stove disinfects. The charge for treatment per inmate is 3 to 5 shillings per day; while the actual cost is about 2s. 8d. Some of the admitted were cured, that is, freed of their bacilli; others were ameliorated or relieved, while not a few were declared to be hopeless. After five per cent. of the profits are paid to shareholders, the remainder is handed over to support a kindred institution close by for the indigent. The other establishments, it may be said, are conducted on the same lines. That of Davos in the Haute Engadine is 1,760 yards above the level of the sea; it is well sheltered and picturesquely situated. It receives 100 patients. The sleeping rooms accommodate 1, 2 and 4 beds; 44 cubic yards of air are allowed per bed, in other cases but only 31. There are no fireplaces. The soiled articles are gathered in zinc receptacles. The minimum sojourn is thirteen weeks; the expense per day, 2, 3 and 5 francs. Baths are occasionally employed, but very cautiously. The inmates spend all their day on long easy chairs under a verandah—Liege-Halle facing the south.

The Heiligenshuendi establishment is situated at an altitude of 1,276 yards. It differs in a few details. Its sleeping rooms never contain more than eight beds made in unvarnished wood; 30 cubic yards of air are allowed per bed. The price of residence varies from 1½, 2½ to 4 francs per day, the duration of the residence is limited to two months. Milk enters largely into the dietary of the patients; the inmates undergo morning frictions, and take a lukewarm bath weekly. The only medicament employed is creosoted cod liver oil. The patients are supplied in winter with skin-sacks, also with impermeable *galoches* or clogs, so as to enable them to keep in the open air and promenade on the snow. They receive specially disinfected pocket-handkerchiefs, but if they expectorate elsewhere than in their own portable, or the general *crachoir* or spittoon, they are fined 2 francs for every offence committed. Only those in the first stage of consumption have, if not been cured, relieved. In all the institutions, the Liege-Halle, or common verandah, where the day is passed, ought to be made gay and attractive. Each patient is

given a long chair on which to rest, at his side is a small table, intended first for the spittoon, and also for books or materials for work. The basis of the amelioration rests upon arresting the spread of disease germs inside the building, and in diminishing them in the surrounding air of the sanitorium. The means are natural, and include the destruction of the expectorations, disinfection of all that is infectious, the effective organization of the sewage, and fortifying the patient to resist and combat the lamentable malady. In some cases where milk diet is relied upon, the cows are changed every six months.

The *crachats* or expectorations are viewed as the chief agents of contagion. It was in 1869 that Villemin first showed and demonstrated the poisonous character of the expectorations of consumptive persons, even when in the dried state; as in the latter case, the virus or bacillus was only in a state of suspended animation. Tappenier confirmed these facts experimentally in 1877 at Munich. In the sanitoria there are three classes of spittoons; those at stated places throughout the building; those in the bedrooms, and those carried in the pocket by the patients. All are daily cleansed with boiling water, while a solution of lysol in soap-water is therein left to prevent the matters drying in the vessels. The regulations are drastic respecting the use of these spitting boxes. The æration of the rooms is very important; even at night a portion of the upper part of the windows is always left open. At Ormesson the windows are ingeniously contrived, so that they can each open into five distinct parts. In 1892 the deaths in Paris were 21·40 per 1,000 inhabitants; they have since fallen to 19·62; but the deaths from consumption remain proportionally oscillating between these two rates. Pulmonary consumption alone caused one-seventh of the deaths. In the medical report on the State of the French Army, just published, it is stated that one-fifth of the deaths is due to some form of consumption. On detecting the first symptoms of the malady, the soldier is at once sent back to his family, to be cured by means of fortifying food, fresh air, isolation and the adoption of hygienic rules. When convalescent he rejoins his regiment. Upon 10,000 adults, aged from 20 to 45 years, pulmonary consumption destroyed 600.

Statistics attest that 500,000 tuberculous persons exist in France, so the death harvest is always great. Except as an academic question, no marked attention is given as to consumption being hereditary. It is to attack the scourge, diagnosize its early existence, and strengthen the constitution against the attacks of the ailment that characterizes the trend of science. Persons by their professions or trades, as in public offices, workshops, etc., are liable to consumption; they are forced to inhale the same air and the dust from dried spittle. Vigilant attention should be given to dietary. The bacillus of consumption can only be killed by a temperature of 158 degrees Fah., hence the danger of undercooked meat. As regards milk, no matter how pure may be its origin, it ought to be boiled. It is the most fruitful source of consumption in the case of children. Veterinary Professor Nocard would have suspended in every school room a notice reminding children that uncooked or unboiled milk promotes death. The breath of consumptive people does

not contaminate, although Heller alleges that a patient in the fullest period of consumption gives off *7 milliards 200 millions* daily of bacilli! In the sanitoria neither the physicians nor the attendants contract the disease; but they are robust, so are in a position to resist the terrible malady. Cases of cured patients do occur, but we do not well know why, or the exact conditions of the happy change. In the rural districts, consumption is constantly cured without any special treatment. Climate, whether at low or high altitude, is an important factor in the evolution of the disease, as is evident where so many persons submit with benefit to a common *régime*, though possessing different constitutions. Invigorating air, fortifying food, disinfecting, an hygienic *milieu* or surrounding, and attacking the malady in its initial stages are all the weapons up-to-date which science possesses to combat the scourge with prospects of success.

PNEUMONIA IN CHILDREN.

Pneumonia in childhood has of late been deeply occupying the attention of pediatrists, and without doubt much good has been effected by the interchange of opinions, and by the ventilation of the subject generally. At the meeting called together by the chairman of the pediatric section of the New York Academy of Medicine, many points in connection with the treatment of the disease were made clear which, up to that time, had been decidedly misty. When the fact is considered that pneumonia is one of the most deadly maladies to which children are prone, it cannot be denied that the time had come for a certain consensus of opinion to be arrived at in regard to its treatment. But before touching on the subject of treatment, it may be as well to refer briefly to the light that has been thrown on the etiology of the disease by means of the researches of bacteriologists. This phase of the matter has been extremely well set forth in an article contributed to the Edinburg *Journal*, of August 26th, by Dr. James Carmichael, physician to the Edinburgh Royal Hospital for Sick Children, who says: "Bacteriology has contributed largely to our knowledge of the disease. The rôle which micro-organisms play in the disease is certainly a very important one, as without doubt the toxemia resulting from their growth and development would appear to be not only the main factor in the production of the constitutional symptoms, but often the principal cause of danger to life. Recent bacteriological investigation shows that quite a number of organisms are found associated with this disease. Netter gives the bacteriology in forty-two cases—in twenty-five primary cases. Friedlander's capsuled coccus or pneumobacillus was found in ten; streptococcus in eight; staphylococcus in five; Fränkel's capsuled coccus in two. In seventeen of the cases there was mixed infection thus: In five pneumococcus and streptococcus; five streptococcus and staphlyococcus; three streptococcus and capsuled coccus; two pneumococcus, streptococcus, and staphlyococcus; one pneumococcus and capsuled

coccus. Mosny and Netter both agree that in cases marked by lobular distribution, streptococcus was usually met with alone or with pneumococcus; whereas those in which the distribution was lobar, catarrhal and fibrinous variety combined, one or other of the forms of pneumococcus, either Fränkel's or Friedlander's organisms, were generally found alone. Other investigators who have studied the different forms of pneumonia have arrived at the conclusion that it is no one organism that causes the disease, but two and sometimes more. Thus plainly proving that the pneumonia of childhood cannot be regarded as a specific disease, seeing that various organisms produce the pathological changes in the lung tissues." The foregoing may be said to be a short, up-to-date presentment of the germ theory of pneumonia in children, and would appear in the main correct. The next forward step, then, is to discover a really reliable antitoxin, but until this is done we must ourselves sift the different modes of treatment at present practiced, and learn from the experience of others in order to arrive at a satisfactory conclusion. At the meeting of the pediatric section, referred to above, some definite opinions were expressed, and from the views of the majority of the speakers we can form our own judgment as to the most beneficial and widely practiced methods of treatment. For example, it was agreed on all hands that rest and complete isolation is absolutely necessary; that careful nursing is one of the most important considerations; and the opinion was unanimous that effective ventilation is essential. The meeting was opposed, on the whole, to the active use of drugs, and few voices were raised in favor of stimulants, while hot poultices were condemned *in toto*. On the question of bathing, opinions differed most widely. Not, however, so far as the beneficial effects of baths themselves are concerned, but with respect to their temperature. Some advocated baths as high as 100 F.; others deemed 70 F. a heat better calculated to produce the wished-for results; while one speaker advised the employment of the wet sheet cooled by ice. The large majority of the speakers deprecated extremes of either heat or cold, but recommended the adoption of a middle course. To refer again to Dr. Carmichael's article. In very severe cases with much cyanosis, he suggests the inhalation of oxygen, the small patient lying under a tent, and states that in many cases he has known the treatment to be of signal benefit. In infantile pneumonia, many physicians in Great Britain assert that belladonna acts like a charm. There would, however, seem to be some diversity of views in this country and Great Britain as to the efficacy of the drug treatment of pneumonia in children. The judgment of medical men here, as evidenced by the expression of their opinions at the meeting of the pediatric section, is distinctly against active medication. In Great Britain, on the other hand, the conservative treatment still, to a large extent, holds sway. As, however, the study of children's diseases as a specialty has been more closely and for a far longer period pursued in America than in the United Kingdom, we may claim—without laying ourselves open to the charge of undue presumption—to be more fitted to pass an authoritative opinion on the matter. The pediatric section deserves the thanks of every medical man for the able manner in which the whole subject was placed before them.—*Pediatrics.*

THE OPERATIVE TREATMENT OF INTESTINAL PERFORATION IN TYPHOID FEVER.

This subject is one which interests the physician and the surgeon to an equal degree and deserves careful study by both, since in some cases life can be saved by prompt action.

There are no more interesting studies in medicine and surgery than those advances which meet conditions heretofore considered beyond relief, and there are few conditions more terrifying to the physician and to the patient's friends than perforation of the bowel in typhoid fever. Theoretically, at least, it would seem that with the progress which has been made in abdominal surgery operative interference is beyond all doubt the chief possibility for the recovery of the patient, yet as a rule both physicians and surgeons have in the past felt timid about restoring to so grave a surgical procedure in the face of the profound exhaustion of the patient from disease. In this connection the statistics which have been recently collected and published by Keen give us clearer ideas of our duty under these circumstances than any others with which we are acquainted. One of the first points impressed upon us by these statistics is that delay is an exceedingly dangerous thing. Thus, as Keen points out, of the sixty patients operated on for perforation of typhoid fever, 26.7 per cent. recovered when the operation was done within twelve hours; whereas the mortality was total when as long as twenty-four hours had elapsed, except in three instances, in one of which the operation was done twenty-six hours after perforation and the other two between two and three days. As a result of these statistics Keen enunciates the law that if operation is not done within about twenty-four hours after the perforation there is practically no hope of recovery.

It is stated in *La Presse Medicale* of May 18, 1898, that Guecehewitsch and Wanach have recorded five instances in which Russian surgeons have operated for intestinal perforation. In 1891 Netschaieff and Troianoff operated upon a man aged thirty-one years, who presented signs of perforation. The operation was practiced six hours after the entrance of the patient into the hospital. Marked evidence of serious peritonitis were found and fecal matter was in the peritoneal cavity. Resection of the perforated portion was performed. Death followed and autopsy revealed typhoid ulcers in the ileum. In 1893 the same authors operated upon a man of twenty-eight years, who presented similar symptoms. On entering the hospital a diagnosis of the ambulatory form of typhoid fever was made, with intestinal perforation. The operation took place seventeen hours after entrance. A general sero-purulent peritonitis was found, the fluid being filled with fibrinous flakes. Quite a large perforation was present; four centimeters of the intestine was excised. The abdominal wall was not immediately sutured, but the opening in it was packed with sterile gauze, and complete recovery followed.

A third case was that of Kohlzoff and occurred in a man of twenty-four years who had typhoid fever and congestion of the lungs. He had symptoms of perfortion with excessive fever. The operation was per-

formed four hours after the perforation. Sero-sanguinolent fluid was found in the peritoneal cavity, and twenty centimeters from the ileocaecal valve there was a perforation. A resection of the perforated portion of the intestine was performed. Death occurred in two days. At the autopsy numerous typhoid ulcers were found near the point of ulceration.

In the fourth case, belonging to Trianoff, a patient twenty-nine years of age had been sick fifteen days with fever. He was seized with violent pain in the belly followed by intense chills, vomiting and hiccough. There was abdominal swelling and general pain. The symptoms were those of perforative peritonitis. The operation began sixteen hours after the accident. Abundant sero-purulent fluid was found in the abdominal cavity and perforation of the intestine had occurred ten centimeters from the ileocaecal valve. Resection of the perforated segment was performed and death occurred fourteen hours afterwards. The autopsy revealed typhoid ulcers in the ileum.

In addition to these cases Guecehewitsch and Wanach report five more. The first of these was a man thirty-six years of age, who had had typhoid fever fifteen days. After eight days he had had bloody stools, violent pain in the belly followed by intense chills, vomiting and hiccough. The belly was swollen and the pain was general. The pulse was 120, the temperature febrile. An operation was performed two hours after the perforation. On exploring the intestines two perforations were found, one two centimeters in diameter, the other much smaller. Twenty centimeters of the intestine was resected, and death followed in about two hours.

At the autopsy ten ounces of fetid pus was found in the belly. The parietal and visceral peritoneum were covered with punctiform hemorrhages. The part of the intestine resected was thirty-seven centimeters from the caecum.

Their second case was a man of twenty-four years, who had been ill some time with typical typhoid fever. Seven days after entrance into the hospital he was seized with violent chills and fever, and all the symptoms of perforative peritonitis. The operation was done seventeen hours after the accident, ether being given after a preliminary injection of cocaine. Perforation of the intestine was found. The mesenteric glands were enlarged and were adherent to the intestine in places. Thirty centimeters of the intestine was resected. Death occurred in six hours after the operation. The autopsy revealed profound typhoid ulceration at the lower extremity of the ileum. There were also signs of catarrhal pneumonia.

The third case was in a young man of nineteen, who had been sick five days. His fever was high and he had bloody stools. Four weeks after his entrance into the hospital he had perforation of the intestine. His condition remained grave, and on opening the peritoneal cavity it was found to be filled with bloody fluid and there were intestinal adhesions. Death occurred in three days. Again the autopsy revealed perforation and ulceration.

A man of twenty-seven presented mild symtoms of typhoid fever. Six days after his entrance he was seized with violent pain in the belly and

with chills and sweating. There was also meteorism. Twenty-four hours after these symptoms the operation was performed. Again the belly was found filled with sero-purulent fluid. Thirty centimeters of the intestine was removed and contained four ulcers. Notwithstanding injections of saline solution, the patient died eight hours after operation. Again the autopsy confirmed diagnosis.

In the fifth case a man of twenty-nine entered on the seventh day of typhoid fever; six days later violent pain in the caecal region came on with moderate fever. Surgical intervention took place thirteen hours after the accident. The abdominal cavity was filled with serous fluid. The walls of the intestine were edematous. Resection was performed. Death occurred in three days. The autopsy revealed the characteristic lesions and pneumonia of both bases of the lungs. Altogether these authors quote seventy-one instances of perforation in the course of typhoid fever, with seventeen recoveries. The number of deaths in operation for peritonitis in typhoid is necessarily high.

In regard to the time for intervention, it is evident that much depends upon the promptness with which the surgeon proceeds to the relief of his patient, and it would seem that good results are apt to follow only in those cases in which the intervention is immediate or where nature has protected the peritoneum by inflammatory exudations which cause a limited peritonitis. In regard to the anesthetics which may be used in these cases, these two Russian surgeons believe that either chloroform or ether is satisfactory, provided the myocardium, the lungs, the liver, are in fair condition. In other instances they think that mixed anesthesia is well. They produce local anesthesia by cocaine and find that smaller doses of chloroform and ether are needed under these circumstances. Washing out of the peritoneal cavity in these cases is of the greatest possible importance, normal saline solution being employed.—*The Therapeutic Gazette.*

CHILDREN'S EMETIC (six to ten years)—

℞ Pulv. ipecacuanhæ ..... gr. viiss,
Antimonii et potassi tartratis ..... gr. $\frac{1}{8}$.
Oxymel scillæ ..... ʒ iiss.
Aq. dest ..... q.s. ad. ℥ i.

M. S. One teaspoonful every ten minutes until vomiting occurs.
—BAGINSKY.

ACUTE COLIC—

℞ Tinct. opii deodorat ..... ʒ i.
Chloroformi ..... ʒ iss.
Camphoræ ..... gr. iv.
Ol. cajuputi ..... ʒ i.
Aquæ ..... ℥ ij.

M. S. One teaspoonful every hour.

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN WITH THE LIQUID EXTRACT OF RHUS AROMATICA.

In a recent issue of *Treatment* we find that Freyberger has used this drug with great success. He gives us a brief summary of the thirty cases of enuresis which he has treated with rhus aromatica.

In all cases spoken of as "cured" at least nine months have elapsed since enuresis had occurred for the last time.

Of the thirty patients treated with rhus aromatica, twelve were boys and eighteen girls; their ages varied from 3 to 11½ years.

At the time when treatment was begun one child suffered from anemia, two from rickets, one from rheumatism, two from chorea, five from morbis cordis, five from large tonsils and adenoids, one from somnambulism, one from pulmonary tuberculosis, and one was microcephalic; while in eleven children no concomitant affection could be found.

One boy suffered from diurnal enuresis; five boys and fifteen girls presented the combined (or continuous) form of enuresis.

The average duration of the treatment was forty days—thirty-five days in boys and forty-five in girls.

The first signs of improvement occurred on an average on or about the seventh day of treatment; the earliest on the third, the latest on the twenty-third day. Thirty-three days on an average were sufficient to produce a permanent cure, fifty-three days to effect a permanent improvement.

Eleven boys and seven girls were permanently cured; one boy and nine girls were permanently relieved; in two girls no improvement could be achieved. A relapse occurred in three girls after an interval of some months.

A temporary exacerbation of the enuresis was noted in eight cases, three boys and five girls; it occurred during or toward the end of the first week in five cases, and during the second week in three cases. While this exacerbation lasted the patients not only wetted their beds two or three times every night, but the quantity of urine passed into the bed each time was considerably increased. This interesting, though somewhat unpleasant, phenomenon lasted from four to six days, and in all cases terminated rather abruptly. During this period of flooding the urine was always very pale; its specific gravity varied between 1002 and 1007. Considering the great disappointment which parents must necessarily feel at this apparent change for the worse, the author made it a rule to tell the parents beforehand that such a recrudesence might possibly occur, but that it would not last long, and in all probability would soon be followed by a decided improvement.

It would be rash to claim for rhus aromatica the qualities of a specific in the treatment of enuresis in children as long as our knowledge of this drug and its action is based upon the results observed in barely 100 cases on which reports have been published; but so much may be said in its favor that it appears to be as efficacious as belladonna, that it may be given for a long time without the slightest ill effect, and that good results may be obtained with it where belladonna proves ineffective.

The astringent taste and disagreeable odor of the liquid extract of rhus aromatica are sufficiently disguised by syrupus aromaticus.

The dose employed was: Five to ten minims for children two to five years old; fifteen to twenty minims for older children.

A very convenient formula is the following:

℞ Ext. rhois aromatica fl., 10 minims.
Syrup. arometici, 20 minims.
Aq. distillate. ad 1 drachm.

Sig.—This amount to be given three times a day.—*Therapeutic Gazette.*

NEURASTHENIA.—Etiology.—The disorders of woman's pelvic organs have no more to do with her nervous and mental diseases than lesions elsewhere in her body; indeed, they have less to do with her psychoses and neuroses than most of her other organs, for, as in the male sex, the chief causes of their neuropsychoses are to be sought in intrinsic disorders of the nervous system itself, or in perverted nutrition of the nervous system dependent upon affections of the gastro-intestinal tract, kidneys, liver, lungs, heart, etc., and upon pathological blood states. It is true that puberty, adolescence, the puerperium, menstruation, and the menopause are often closely related to the outbreak or to the exacerbation of many nervous and mental disorders, but the pelvic organs themselves play but a small rôle in these physiological commotions. They have to do with the whole organism of woman. It is not denied that pelvic diseases in women attended by exhausting pain may give rise to neurasthenic and hysterical states, but the influence of exhausting pain in these organs is no greater than similar exhausting pain elsewhere in the body. Nor is it denied that disorders of the female organs which affect the nutrition of the nervous system, such as excessive hæmorrhage, or suppurative processes, may be important factors in inducing functional neurosis and even insanity, though disordered blood states brought about by pelvic disease are very infrequent as compared with disordered blood states dependent upon disease elsewhere. There is no evidence whatever to support the opinion that insanity was ever due to a mere reflex influence from pelvic disease. In insanity the two great etiological factors are hereditary instability and some physical or moral stress directly affecting the nervous system. There has never been brought forward any evidence whatever to show that either epilepsy or chorea can be induced by disease of the female organs. Frederick Peterson (Annals of Gynecology and Pediatry, Aug., '98).

HEADACHES—

℞ Sodii brom.....ʒ i.
Phenacetin.....gr. xxx
Caffein. citrat.....gr. xviij.
Sodii bicarb.....ʒ i.

M. et. ft. chart. No. vi. S. One every fifteen minutes till relieved, to be followed by a Seidlitz powder.

—DR. M. STALLER.

HYDROTHERAPEUTICS: A BRIEF HISTORY OF THE SUBJECT.

When we think of the many effects which can be produced on the various functions of the human organization by the application of water at different temperatures and in different forms, and of the many centuries during which water has been made use of as a most valuable remedial agent, though in but a limited measure, it appears remarkable that it is not now of much more general application. Modern medicine is apparently about to develop and establish its great value in the treatment of most forms of disease.

It is worthy of note, and a sign of the times, that the universities of Vienna, Heidelberg and Wurzburg have had for some time their scientific hydrotherapeutic institutes, and the science and art of hydrotherapy has had its place in the medical curriculum of the schools. In connection with the Berlin University a like institute has just been established, near to and connected with the new Charité Hospital.

Doubtless the use of water as a remedy in regular medical practice has been kept in the background on account of its adoption by persons having no scientific medical knowledge—by quacks, in short. This has been the case with some of our most valuable remedies—as in super-respiration by means of lung gymnastics, for example. The profession, it is to be feared, has been too backward—too conservative in this respect.

To be sure, in general practice the use of water is in many cases much more difficult than drug prescribeing. This has, doubtless, contributed to delay the general application of the remedy.

Hydrotherapy, notwithstanding, has gradually, slowly, but surely, epoch by epoch, as it were, worked its way up. We know but little about it previous to the time of Hippocrates. It was probably used by the Assyrians and Egyptians, as well as by the Israelites, for something more than the purposes of cleanliness. And three thousand years ago Homer wrote that Hector's wife prepared the warm bath for the refreshment of her husband on his return from Troy.

> ....."Not yet the fatal news had spread
> To fair Andromache, of Hector dead.
> . . . . . .
> Her fair-haired handmaids heat the brazen urn,
> The bath preparing for her lord's return."

Rules for the treatment of disease by water were laid down by Hippocrates, which are still practised by both physicians and quacks. Asclepiades, though not possessed of much medical knowledge, performed "miraculous cures" in Rome by baths, chiefly, with a judicious diet and massage. So freely did he practise the water treatment that he was dubbed "Psychrolutus." He founded the school whence sprung Themison and Celsus. Musa, who cured Augustus by the vigorous use of cold baths, was a pupil of his. And so grateful was the emperor that he had a statue erected to Musa. The "Latinorum Hippocrates," Celsus, used water freely in his practice. So did Aurelianus, who was the first to pre-

scribe the wet abdominal compress for hypochondriacs. Galen was an advocate of water treatment, and first used cold to the head with the body in warm water. Through the many dark, and in many respects hydrophobic, centuries which passed after Galen, comparatively little is known of the history of medicine. England's Hippocrates, Sydenham, practised much as did the father of Greek medicine, and assisted nature in removing morbid or noxious products from the system. A few years after him Sir John Floyer published a history of cold bathing which created an epoch in hydrotherapy. The book passed through many editions, was translated into German, and was the cause, it is said, of making this practice eventually more popular on the continent than in England; the practice being adopted into the Vienna hospital. Blair and Cheye were advocates of hydrotherapy, and the illustrious Hoffman was the first to recognize the use of cold water as a tonic. Theden, surgeon of Frederick the Great, was the first to use it in fevers, smallpox and rheumatism. The work of the illustrious Currie, published in 1797, first placed hydrotherapy on a scientific basis. Later, the philosophic Hufeland offered a prize for the best treatise on the action of cold water in fevers, determined by thermometrical study.

The "water cure" was made more popular than ever before by the German farmer, Vincens Priessnitz, who enlarged his farmhouse to receive patients; who in 1840 had treated over 1,500 patients; and in 1852 had amassed an immense fortune. A copious literature sprang up, monuments and fountains were erected to his memory, and physicians from all countries, who had been attached to his mountain home, became converts to hydrotherapy.

Magendie and Fleury explained their clinical success with water on true physiological principles. And, later, Brand introduced his fever treatment, as now largely practised.

Scoutetten, a French physician, after studying hydrotherapy in Germany, reported that "The numerous cures it has wrought recommend it, and it lies in the interests of humanity and medical science that its practice in Paris take place under the eyes of able physicians."

Niemeyer, in his work on practice, says: "A series of cases are on record in which complete and perfect cures have been obtained by it after all other methods of treatment had been applied in vain."

Professor Peter, in his preface to Duval's great clinical work on this practice, writes: "Hydrotherapy suffices in most cases of disease; added to other treatmet it is a most powerful auxiliary."

And Professor Erb, in Ziemssen's cyclopædia, writes: "To the most important and most active agents in the therapeutics of our field" (nervous diseases) "belong cool and cold baths—the application of cold water in the most varied forms; that which is usually termed cold water treatment. Having been in recent times practised more rationally and studied more exactly, it has attained remarkable prominence."

With all this, and much more, does not hydrotherapy seem worthy of a special chair in our medical schools?

THE PRESENT STATUS OF OPINION UPON THE USE OF QUININE IN MALARIA.

BY H. A. HARE, M.D.

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The return to this country of large numbers of soldiers affected by malarial disease, and by the prospect of colonization of certain tropical countries by citizens of the United States, have naturally caused much interest in malarial fever, and in the æstivo-autumnal parasite in particular. Physicians in the North have suddenly developed an extraordinary degree of interest in a subject which their Southern brethren have long considered of vital importance, and in consequence have studied it with considerable zeal, so that many of them have arrived at definite views as to the matter in debate.

With these introductory remarks I proceed to a friendly criticism of a special article in the *Medical News* of December 17th, 1898, by an anonymous writer.

In this article the value of quinine as an anti-malarial is discussed, its praises sung, and then the writer sets his spear and proceeds to charge valiantly into the ranks of those who have the temerity to believe that quinine, like every other drug, has limitations as to its usefulness in malarial disease, and that it is given recklessly and in unnecessarily large doses. This writer also states that "there is in the air a spirit of opposition to the drug which is liable to do a good deal of harm." If this is true, it is unfortunate, for no one can deny that, so far as the infecting organism is concerned, quinine acts as a specific.

On the other hand, it is certainly a fact that quinine has been shamefully abused in malarial fever, that it is often given in excessive doses and in cases in which its use is contraindicated, and finally, because the practitioner has been led to believe that "where is malaria there should be quinine," he has been led to prescribe it without studying the case thoroughly, and therefore has failed to find that its use is sometimes unwise and that the condition is sometimes not really malaria at all.

The objection to the paper we have quoted is not that it urges confidence in quinine, but that it urges its universal use, with disdain for those who recognize its limitations. Thus that part of the article dealing with hæmaturia seems to indicate that the writer falls into the category defined by himself for the writer of an editorial in the *Journal of the American Medical Association*, namely, "one with but small experience with malaria, or perhaps none," since in the next sentence he proceeds to tell us that the voices of our Southern medical men, of the medical men of India and of Brazil and Italy have been as a unit in favor of the universal use of quinine. That this statement is anything but correct is shown by the fact that a very large proportion of these physicians have testified to the opposite effect. Thus, to take up the most recent literature, we find Goltmann and Krauss, the sub committee on pathology of the committee on malarial hæmaturia of the Tri-State Medical Associa-

tion, in a report published in the *Memphis Lancet* for December, 1898, telling us that they are "forced to the conclusion that, malarial hæmaturia once begun, quinine has no place in its therapy;" and, again, "the injudicious administration of quinine is often responsible for a hæmaturic attack." In *La Press Médicale* for December 3, 1898, Vincent informs us that American statistics demonstrate that the greater number of patients survive that do not receive quinine, and Nettér thinks that the absorption of quinine plays an important part in the production of bilious hæmoglobinuric fever. In the *Therapeutic Gazette* for 1897, page 94, Dr. Meek, of Arkansas, protests "in the name of humanity" against the use of quinine in this affection; and many other references to papers in Southern journals during the last few years could be given, not all against the use of quinine, but the majority at least preaching care in its use and recognizing that it may do harm.

In this connection it is proper to point out that physicians elsewhere than in America have reached similar views, and Karamitsas, a Greek physician, has published in the *Bulletin Générale de Therapeutique* an interesting paper dealing with seven cases in which, in the absence of acute malarial manifestations and because of malarial cachexia, quinine produced hæmaturia whenever it was given, and further, these patients failed to have this symptom in acute attacks, if quinine was withheld, but suffered from bloody urine if it was used. Rizopoulos in Greece and Tomaseli in Italy have also seen cases in which quinine would produce hæmaturia. In Guadaloupe Du Chassaing has reported such cases. Other cases have been recorded by Pampoukis and Chomatianos, of Athens, Greece, and also by Carreau.

In view of these facts, the statement in the article quoted, that Koch "started" the present reaction against quinine by stating that quinine was given too freely in African malarial fevers, and that it caused "blackwater fever," is scarcely correct. Whatever weight his views may have, he certainly did not "start" the reaction.

As long ago as 1892 the author of this paper became interested in this important question and made a collective investigation of the views of physicians living in those parts of the United States in which the mortality from malarial infection was greatest, namely, seventy per thousand or over, and reported the results to the Association of American Physicians.

While the views expressed by my correspondents were very antagonistic, I thought myself justified in stating that quinine is often useless and harmful in the bloody urine of malarial infection, although it was also evident that circumstances might exist in which the drug could be used. Much of the contradiction is more fancied than real, and depends upon the fact that the bloody urine may be due to many causes, such as acute renal congestion in the paroxysms owing to great distention of the renal vessels, to degenerative renal vascular changes as the result of chronic malarial poisoning, because of degenerative processes which cause the red cells to disintegrate, and finally to paroxysmal hæmoglobinuria not due to malaria.

It is evident, therefore, that quinine might be useful in one case with

bloody urine and not in another, and the burden of this article is not to prove that quinine is never useful, but that it is not a "cure-all" in these states. That it may do damage is proved by the authorities quoted, and by the following facts that show, I think, that my friend who wrote the editorial in the *Journal of the American Medical Association*, who ever he may be, is not so ignorant as the *Medical News* would have us believe.

That malarial poisoning does cause nephritis in certain cases is admitted by every one, and Thayer tells us that in Baltimore tube-casts were found in the urine of 17.5 per cent. of the malarial cases, and Osler says that albuminuria was found in 46.4 per cent. of his cases in the wards. If this is true of a point so far north as Baltimore, it probably holds with greater force for those places where the malarial poison is still more virulent. Atkinson has shown that nephritis is a sequel of malarial infection; the committee of the Tri-State Society of Alabama, Tennessee and Mississippi has found nephritis in all cases of fatal malarial hæmaturia; Ralfe has done likewise, and Kiener and Kelsch have reported that there is glomerulitis.

Admitting, then, that malarial disease produces changes in the kidneys, let us see if quinine is capable of so doing. We find that all writers of experience state that quinine, particularly in full doses, possesses distinct irritative effects on the genito-urinary tract, and I have proved that in poisoning by quinine the kidneys become congested and finally inflamed.

Guyochin has reported cases of genito-urinary irritation after the use of quinine, and Faginoti reports a case in which there were pain in the urinary passages and the discharge of a few drops of blood on urination. Monneret has seen positive hæmaturia follow its use, and Rivet has observed vesical spasm and hæmaturia after an ordinary dose of the drug. Dasset reports the development of hæmaturia, with retention of urine, from cystic irritation due to quinine, and Cachere records two cases in which hæmaturia followed the use of quinine. In one of these, a boy of thirteen had profuse hæmaturia after the dose of ten grains, and a girl of seven years was affected similarly whenever quinine was used. Stillé states that quinine irritates the urinary organe, and that if any part of this tract is diseased the lesion is aggravated.

Three facts may therefore be deducted: (1) That quinine sometimes produces hæmaturia in malarial disease; (2) That malarial disease often congests, irritates, or inflames the kidney; (3) That quinine is capable of doing likewise.

This paper so far, has, doubtless, seemed destructive to the use of quinine in malarial nephritis and hæmaturia, but it is not to be regarded as advocating that no quinine be given; rather that it be given wisely. It must be evident that hæmaturia coming on in acute intermittent malaria is a manifestation of blood-breakdown or renal lesion and is a result of the congestive stage of the attack. To give quinine during the hæmaturia is equivalent to "shutting the door after the horse is stolen," and in addition gives the kidneys the irritating work of elimination. It would seem more rational to give it to prevent the next paroxysm.

In hæmoglobinuria occurring with the paroxysm there is probably less danger in using quinine than when true hæmaturia is present, since the kidneys are not as hindered and clogged by blood-clots; but even here it

must be evident that quinine can only stop future attacks, not the one already in existence. Should the attack of hæmoglobinuria be prolonged, indicating that the malarial poison is destroying the corpuscles independent of the chills, then quinine may be needed. If it is given, I believe that cholagogues, followed by a brisk purge, should be used to aid in the elimination of coloring-matter through the liver and bowel, and to relieve the kidneys of all labor which it is possible to remove. If in any case the intermittent paroxysms are so frequent as to make the quinine necessary, in view of the fact that other measures have failed, the same attention to the bowels should be given; the kidneys should be flushed out by diuretics such as the vegetable salts of potassium, and the quinine be given because the danger of the continued attacks is greater than that of renal involvement from the drug.

The third class of cases, namely, those which are included under the severe forms of bloody urine associated with jaundice and general hemorrhages from the stomach, the bowels, and the nose, are more difficult to treat than those just discussed. They present all the difficulties which non-hemorrhagic remittents produce, and the peculiar inability on the part of the absorbents, coupled with the bilious vomiting, makes all medication difficult, let alone the complication of bloody urine.

Much that has been said in regard to the condition of the kidneys and the contraindications to quinine in the milder forms of malaria, already spoken of, holds true with the severe form of hæmaturic fevers, yet here the very severity of the infection calls for quinine, although the contraindications are stronger than ever. This may be cleared up, however, by a recollection of three facts, namely, (1) that this malignant form comes on suddenly with the access of a malarial attack in a patient already broken down; (2) as an attack of hæmaturic jaundice without any evidence of another dose of malarial poison; (3) there are a number of remedies which are capable of doing much good before quinine is resorted to. The quinine will be needed in the cases suffering from active malarial paroxysms imposed on the subacute or chronic forms, but will not be needed in the second class of chronic cases, which should be treated by other measures directed to the relief of the dyscrasia and bloody urine.

It seems evident, therefore, that quinine, like the tints of the artist, must be "mixed with brains" if the best results are to be obtained, and that its routine use with blissful ignorance of its dangers ought not to be advocated; while, on the other hand, no one should for a moment cast discredit upon a truly specific remedy.

HYPO-SUBSTITUTE FOR OPIATES.

Dr. Obe F. Watlington of Memphis, Tenn. writes in the "Medical Brief," "I have in my possession a hypodermic alkaloidal solution, which is a specific in drug addictions (opium habituation, alcoholism, etc.). On receipt of a stamped envelope, or a two cent stamp, I will take pleasure in furnishing any Physician the formula, by the use of which a number of the fraternity have been enabled to cure themselves of Opiumism, Alcoholism and Insomnia. I used morphia hypodermatically for ten years. Obtained a perfect cure by this prescription."

THE SURGICAL TREATMENT OF PERICARDITIS.

Dr. Brentano has made a study of the cases of pericarditis in the surgical department of the City Hospital at Uraban in Berlin, under the directorship of Dr. Korte. He believes (*Deutsche med. Wochenschrift*, No. 82, 1898) that operative interference is indicated only in exudative pericarditis, and here only when the life of the patient is threatened or a purulent inflammation is suspected. He classifiies the methods of operation as follows: (1) Puncture; (2) incision through an intercostal space; (3) incision preceded by resection of a rib. There is no point at which puncture can be made with positive safety to the heart. As regards the position of the heart in pericarditis with effusion, experience in the Urban City Hospital has shown that in a pericardial sac filled with fluid the heart assumes a position against the anterior chest wall unless held in some other position by adhesions. The coronary arteriesare therefore in danger of being injured during puncture, but much more frequently the pleura is threatened; in fact, in the majority of cases, pericardial paracentesis is made through the healthy pleura. This, under certain conditions, may lead to pleural effusion. Moreover, a pericardial exudate can rarely be entirely removed through a single puncture. Dr. Brentano has, therefore, totally discarded this procedure, as well as the operation by simple incision, because in the latter the internal mammary artery and the pleura are apt to be injured, it is difficult to obtain a clear view of the deeper structures, and adhesions cannot be adequately surveyed. On the other hand, the opening of the pericardial sac after resection of a rib is such a simple operation that it may often be attempted without narcosis, and carried to completion under local anæsthesia alone. The fifth left costal cartilage is the proper one to be resected, and after being stripped of its intercostal muscles, should be separated close to the sternum and at its junction with the rib. The mammary vessels crossing the body of the triangularis sterni muscle are to be doubly ligated and divided. The fibres of the muscle are then separated by blunt dissection, the over-lapping pleura is retracted, and an incision made in the whitish, glistening pericardial membrane. The fluid escapes in spurts, because the heart shows a tendency to close the opening. In purulent exudation, irrigation with sterilized water is recommended. The incised edges of the pericardium should be stuured to the skin incision, and the cavity drained by strips of iodoform gauze. In purulent cases the sac is irrigated daily with sterilized water. According to Dr. Brentano, in cases operated upon by this radical method, intrapericardial adhesions are less apt to occur. In the five cases thus operated upon, only one recovered, but the others were markedly relieved by the operation, and death resulted from the causative disease, and not from pericarditis. Pericardiotomy with resection of the fifth rib in two cases of purulent pericarditis, due to osteomyelitis, did not prevent a lethal termination.

EPITOME OF CURRENT LITERATURE.

MEDICINE.

The Etiology and Prophylaxis of Tuberculosis.—Andvord (*Norsk. Mag. for Lägevid.*, 1898, No. 4) bases his paper partly on the extraordinary constancy of the death rate from tuberculosis at all ages in any particular locality, and partly on the after-history of 814 children who had been treated in hospital for "scrophulo-tuberculosis." It was found that 60 per cent. of these were in excellent health, while a third had either succumbed to tuberculosis or were suffering from it at the time the enquiry was made. This shows that the percentage of persons with tuberculous phthisis rises with increasing age. The writer, therefore, comes to the conclusion that infection with the tubercle bacilli begins, as a rule, in childhood, and that in crowded areas the whole population is more or less infected, and inherits the predisposition to infection. The tuberculosis death-rate in any locality depends on a local constant, which Andvord considers to be the inherited or acquired power of resistance of its inhabitants to the infection. The practical conclusion is, that, in the battle against tuberculosis, the chief point is to protect the children from infection, and therefore to attack all enlarged tuberculous glands.

Meningeal Hæmorrhage in the Course of Purpura.—Havas (*Deutsche Med. Wochenschrift*, Sept. 8, 1898) reports a case of this complication in a girl aged 3 years. There was a history of hæmophila in the father's family. The child was convalescent from measles when purpura hæmorrhagica set in, with bleeding from the nose, mouth, and intestine. After this had continued for a fortnight clonic spasms on the left side of the mouth, and later in the left arm, were observed. These were followed by left glosso-facial monoplegia, and paresis of the left arm, with recurrent epileptiform convulsions in the paralyzed parts. There were headache and vomiting, a contracted condition of the left leg, and finally coma and high ante-mortem temperature. A diagnosis of either a hæmatoma of the dura mater or a considerable hæmorrhage over the pia mater was made. The site of the hæmorrhage was, on the first day, over the lowest part of the right anterior central convolution (paralysis of facial and of hypoglossal), but extended on the second over the middle third of the right central convolution. The contraction of the left leg was probably due to irritation of the neighbouring leg centre (paracentral lobule).

Malt Soup as a Food for Infants with Gastro-enteric Disorders.—Keller (*Deutsche Med. Wochenschrift*, Sept. 29, 1898), in the belief that none of the newer preparations of "humanised" cows' milk, including Gaertner's "fat-milk," are able to replace mothers' milk successfully, or have had any effect in reducing infant mortality, has carefully investigated the physiology and pathology of infant metabolism. His results show that, in infants with gastro-enteric disorders, the food must

be strongly alkaline; much casein and fat must be avoided, and to some extent replaced by easily oxidisable carbohydrates. He strongly recommends the following receipt both on practical and theoretical grounds. 50 grammes of wheaten flour are stirred up thoroughly in one-third of a litre of cows' milk and strained. In another vessel 100 grammes of extract of malt are dissolved in two-thirds of a litre of water at 50° C., and 10 c.c. of an 11 per cent. solution of bicarbonate of potassium added. The two are mixed together and boiled. It is then ready for use. This preparation has been extensively used both for out and in-patient infants with gastro-enteric disorders at the Breslau Hospital, and all the physicians there are convinced of its superiority over all other artificial combinations. The babies gain weight during its administration, and no bad cases of rickets have occurred.

The Valuelessness of Drugs in the Treatment of Gout.—Dr. Arthur P. Luff (*Lancet*, 1898, No. 3902, p. 1606) states that the treatment of this disease by alkalies is mainly based on the assumption that uric acid is present as such in the blood and tissues, and is rendered soluble by the administration of alkalies, that uratic deposits of sodium biurate are dissolved by alkalies, and that the system of a gouty person is pervaded by a general acidity which is neutralised and removed by alkalies. With regard to the first assumption, it is now well known that in gouty subjects uric acid is never present as such in the blood and tissues, but is always combined with sodium as the quadriurate or biurate. The only way in which alkalies could beneficially affect the quadriurate would be to delay its conversion into the biurate. Experiments with an artificial blood-serum to which potassium carbonate, potassium citrate, lithium carbonate, lithium citrate, sodium bi-carbonate, sodium phosphate, piperazine and lysidin were added in solution showed that this conversion is not delayed. The following do not in the slightest degree increase the solvent power of the blood for gouty deposits: Potassium carbonate, potassium citrate, lithium carbonate, lithium citrate, sodium phosphate, piperazine and lysidin. Sodium bicarbonate slightly decreases the solvent power of the blood for gouty deposits. The assumption that in connection with gout there is a general acidity of the system which causes a diminished alkalinity in the blood is opposed to the results of recent investigations upon the subject. Klemperer showed that the alkalinity in the blood in gout is very little, if at all, diminished, and that corresponding variations in the alkalinity of the blood may frequently be met with in healthy individuals. Moreover, a diminution of the alkalinity of blood serum containing uric acid in solution does not facilitate the deposition of sodium biurate from it, nor does a diminution in the alkalinity of blood-serum diminish its solvent power. Experiments with sodium salicylate show that it has no direct action either in delaying the decomposition of sodium quadriurate, or in effecting a solvent action on deposits of sodium biurate. The supposed solvent effect of sodium salicylate for gouty deposits does not, therefore, exist. The correct explanation of the increased elimination of uric acid in the urine during the administration of sodium salicylate is that salicylic acid unites readily with glycocine, and

so conveys an increased amount of that body to the kidneys, where, by its combination with urea, an increased amount of uric acid is necessarily formed. This increased formation of uric acid is directly detrimental to gouty subjects, and on that account the salicylates are contraindicated in that disease. The general conclusions are that the ordinary alkalies, lithium salts, piperazine, and lysidin are useless, and sodium salicylate is also apparently contraindicated in gout.—*Amer. Jour. of Med. Sciences.*

General Paralysis and the Tetanus Bacillus.—Montesano and Montessori (*Centralbl. f. Bakter. u. Parasitenkunde*, Bd. xxii., No. 22 u. 23) made pure cultures of the tetanus bacillus and the streptococcus pyogenes from the cerebro-spinal fluid taken from a case of general paralysis of the insane by lumbar puncture. The inoculation of animals with these bacilli produced tetanus, though the patient during life had shown no symptom of this disease. The writers believe that general paralysis is an infective disease, and, in spite of a negative search for the bacteria in ten other cases, that the tetanus bacilli had a causal relation to the paralysis, or at least to the epileptic fits which occurred in its course. Both this patient himself and his father had had syphilis.

Chronic Tonsillar Abscesses and Their Results.—(*Berliner Verein für innere Medicin*, Oct. 24, 1898.) Dr. Treitel observed that it is now well known that acute infective processes may result from tonsillar affections, and that there is a relation between sore throat and articular rheumatism, pleurisy, perityphlitis and pyæmia. A series of cases of septicæmia starting from the tonsils has been published, in many of which the primary focus was so slight as to be unnoticeable. It is probable that even the streptococci, which are normally present in the lacunæ, may, under certain unknown conditions, become virulent and give rise to septic infection. Especially grave conditions may arise if the abscesses are situated deeply in the tonsils. Such a case Dr. Treitel observed himself. A man, aged 63, became ill with slight huskiness and fever, and difficulty in swallowing. A laryngoscopic examination revealed an œdematous swelling of the epiglottis and aryepiglottic folds. The dyspnœa increased and tracheotomy was performed, when a foul-smelling abscess over the tracheal cartilages was opened. The man died. Post-mortem, there was found recent mediastinal suppuration and multiple tonsillar abscesses, which, from their thickened walls, were evidently old.

Such chronic abscesses are not infrequently the starting point of a widespreading infection, though it is the exception to be able to diagnose them during life. It is, therefore, good practice to lay open tonsillar lacunæ in patients who are subject to frequent sore throats, and to insist on cleanliness of the mouth and nose.

Dr. Benda pointed out that there was a distinction between infective diseases which may invade the system through the tonsils, and true pyæmias arising from tonsillar abscesses.

The Dosage of Belladonna and Nux Vomica.—Dr. Leech (*Brit. Med. Jour.*, Nov. 12, p. 1495). The investigations of pharmacists subsequent to the publication of the 1885 *Pharmacopœia*, show that accurate dosage with the official preparations of belladonna and nux vomica is impossible, since, however carefully such preparations are made, their strength may widely vary owing to the difference in the amount of alkaloid contained in the crude drugs themselves; hence the necessity for the changes made in the *Pharmacopœia* of 1898. The alkaloid contained in the maximum doses of the preparations of belladonna in the 1885 *B.P.* varies from $\frac{1}{500}$ to $\frac{1}{15}$ of a grain. In standardised preparation of the 1898 *B.P.* the width of limit has been greatly lessened. The largest dose of the new tincture (15 m.) corresponds to $\frac{1}{150}$ grain of alkaloid; the largest dose of the alcoholic extract to $\frac{1}{100}$ grain, these amounts being equivalent to about two-thirds and 1 drop of liquor atropinæ sulphatis respectively. The tincture and extract of nus vomica have been rendered likewise much less variable in strength than formerly by standardising according to the amount of strychnine instead of according to the amount of total alkaloid contained.

Weil's Disease.—L. Klein and F. Schutz (*Wiemer Med. Wochenschrift*, No. 6-8, 1898) have observed six cases of Weil's disease, in all of which the cardinal symptoms—viz., fever, nephritis and jaundice—were present. The disease is ushered in by fever, which begins suddenly, quickly attains a maximum, and falls to normal in five to six days by lysis. At the same time there are violent muscular pains, and pains in the neck, with sore throat. The urine is always albuminous, and often contains casts. The pulse rate is generally quickened, but may be subnormal. Jaundice appears simultaneously with the fall of temperature; and, therefore, five to six days after the onset. About this time the liver is almost always enlarged. The spleen is generally enlarged from the beginning. Grave cerebral symptoms and vomiting often appear with the jaundice, so that they have some relation to those accompanying icterus gravis. There is no rule as to the state of the bowels. Cutaneous petechlæ are common.

The disease always begins very acutely, but improvement is noticeable in a few days, and convalescence, though eventually tedious, is established in the second week.

All the writer's patients had been bathing in dirty water, which had been sometimes swallowed. The outbreak of the disease, which occurred in barracks, ceased immediately on forbidding bathing. One patient had, also, been eating bad meat, which is supposed to be a frequent cause of the disease. The poison gains admission from the digestive tract, and possibly, in some cases, through the throat.

Chronic Jaundice With Enlargement of the Spleen.—J. Levy (*Thèse de Paris.* 1898) calls attention to a variety of chronic jaundice whose clinical characters are, (1) chronic icterus of uncertain duration, appearing paroxysmally, with moderate enlargement of the liver during the attacks, (2) considerable hypertrophy (permanent) of the spleen, which

during the paroxysm is congested, and which becomes more and more sclerosed, (3) digestive disturbances, (4) mostly intense anæmia, but (5) no ascites or collateral venous circulation. The cause seems to be an ascending infection of gastro-intestinal origin, which reaches the larger bile-ducts. Unless this jaundice is distinguished from that due to gall-stones, it may lead to unnecessary surgical operations. The prognosis is favorable as the disease may last for twenty years or more. This variety may be classified among the simple chronic infective jaundices. Hayem has proposed the name, "Ictère infectieux chronique splenomégalique à poussées paroxystiques."

Pneumonia with Empyema, Cerebral Abcess and Meningitis.—Aufrecht (*Deutzches Archiv. für Klin. Med.*, Bd. lix. Hft. 5 u. 6) reports a case where a pleural effusion was diagnosed during a typical attack of pneumonia, with rusty sputum and pain in the left lumbar region. A week after the onset of the pneumonia the patient had severe cerebral symptoms, which lasted for twenty-four hours only. Eight days later an operation for empyema was performed, and this was followed by a slow recovery. Eight days after the discharge from hospital he was seized with fever, vomiting, and retraction of the head, which were followed by coma and rapid death. Post-mortem recent purulent meningitis was found, which had started from an abscess in the left corpus striatum. The writer thinks there can be no doubt that this abscess was metastatic, had begun during the pneumonia, and, after lying latent for two months had ruptured into the lateral ventricle.

Locomotor Ataxy and Syphilis.—Scheiber (*Deutsche Med. Wochenschrift*, Sept. 22, 1898) throws doubt on the inference usually drawn from statistics that syphilis is the principal, if not the only cause of locomotor ataxy. Cold, over-fatigue, worry, venereal excesses or injury, are now generally rejected as causes. As regards fatigue, however, Edinger and Helbing have recently shown that rats, if made to work hard and long, develop exactly the same lesions in the posterior columns of the spinal cord, and in the nerve roots, as occur in tabes. Statistics, in this case, as a rule depend on the patient's word, and are, therefore, untrustworthy. The following facts ought to outweigh theories: (1) In many countries (Japan, Bosnia and Herzegovina, Central Asia, Abyssinia, etc.) syphilis is exceedingly common, while tabes is very rare, or altogether unknown. (2) Tabes is rare in prostitutes, who have mostly had syphilis. (3) Several cases are known where tabes developed in *virgines intactæ*, and where, from the circumstances, syphilis could be excluded with certainty.

Diphtheritic Noma.—Freymuth and Petruschky (*Deutsche Med. Wochenschrift*, Sept. 22, 1898) publish a case of cancrum oris occurring in a boy aged 8 years, who was in the sixth week of a severe attack of typhoid fever, in which Widal's reaction was present and typhoid bacilli were found in the urine. In the necrosed mucosa Petruschky found, besides what he held to be harmless saprophytic vibrois, cocci, and spirilla, also

typical diphtheria bacilli, though these were very slightly pathogenic for guinea pigs. The child, after being at death's door, recovered with eight injections of diphtheria antitoxin, in all, 9,500 units. The writers draw attention to the importance of diagnosing diphtheritic noma early, with a view to its treatment by antidiphtheria serum. Though the causal relation of the bacilli to the disease was not actually proved, they believe it to be a not uncommon occurrence, since, earlier in the year, they published (*Medical and Surgical "Review of Reviews,"* vol. 1, p. 153) a case of noma of the vulva, in which diphtheria bacilli were found, and which recovered under antitoxin.

The Painless Treatment of Cracks in the Nipples.—At the meeting of the Obstetrical Society, held on Nov. 10, a paper was read by MM. Maygrier and R. Blondel, upon the Treatment of Forty Cases of Cracked Nipples at the Charité Hospital. They had dressed the cracks with orthoform, which brought about complete anæsthesia during suckling and kept the cracks aseptic. The application of the powder causes only slight smarting. The infant was put to the breast a quarter of an hour afterwards, and sucked eagerly, as orthoform has neither taste nor smell. The anæsthesia persists for some time. MM. Maygrier and Blondel made trial of orthoform powder alone, of orthoform followed by a moist dressing of boric acid, and finally with a strong alcoholic solution of orthoform dropped into the cracks. They considered this last method the best, for it caused no more initial smarting, but it quite did away with infection of the breast, probably because the solution was able to penetrate into the recesses of the fissures.—*Lancet*, Nov. 19, p. 1369.

Blue Nasal Secretion.—At the annual congress of the French Society of Otology and Laryngology, M. Molinié, of Marseilles, related the case of a young woman, aged 25, in whom, after a severe attack of grippe, there occurred a discharge of blue secretion from the nose. In the beginning the discharge was generally viccous and colorless. Several times during the day, however, the mucous was streaked by lines of blue as deep as methylene blue. Examination of the nasal fosse demonstrated that the source of the secretion was the right middle meatus.

A short, squat bacillus with rounded extremities, colored by methylene violet and gentian violet, and retaining its color under the Gram reagent, was found. Although cultures did not yield the characteristic blue color, it is very probable that this case of blue chromorhinorrhea was due to the development of a pyocyanic colony in the frontal sinus of the right side.—*Revue Hebdomadaire de Laryngologie, etc.—St. Louis Med. Jour., Nov.*

The Treatment of Burns with Chlorate of Potash.— Larger (*Gazette des Hôpitaux*, Oct. 27, p. 1131) employs cold solution of chlorate in local or even general baths immediately after burns. In case of urgency all that is necessary is to throw the crystals into cold water and agitate a little; in consequence of its feeble solubility the salt dissolves only to

the required degree. The remedy is efficacious in even deep burns, but the action is particularly evident in the erythema of superficial burns. Relief is immediate.

Such is the treatment at the beginning when pain is dominant. Later, the method varies according to the depth of the burn. If deep, it is treated with dressings, like an ordinary wound; if superficial, compresses of chlorate of potash are continued until the end, but they are covered after one or two days with mackintosh.

Chlorate of potash has the advantages of being a feeble antiseptic, and not only non-irritant, but soothing. Administered in large doses it is toxic, but used in this manner it is absorbed in only small quantities. During twenty-eight years, M. Larger has employed it at all ages without accident.

Boulimia.—On August 27 an inquest was held at Plumstead upon the body of William Ward, aged 84 years, an army pensioner, who died from asphyxia. At the post-mortem examination three pieces of meat, measuring in all 12 in. in length, were found in the deceased's "throat." Evidence was given that he was always a gluttonous feeder and in the habit of bolting his food. His daughter-in-law said that she used to mince his food, but that even then he would bolt such large spoonfuls that he had to gasp for breath. A verdict was returned of "Accidental death." Instances of ravenous appetite are not uncommon, constituting the condition known as boulimia or bulimy, moreover, this craving for food substances is sometimes associated with another condition known as polyphagism, when the sufferer eats pins, string, broken bottles, and other indigestible articles. The *Lancet*, for May 5, 1894, commented upon the death of a man in the London Hospital whose stomach was found after death to be full of a heterogeneous mass of these things. Certain tribes in South America are known as earth-eaters, from the habit they have of filling their stomachs with clay, and the custom of gorging is not uncommon among those who live a precarious life. In 1799 there was a French prisoner in England, by name Charles Domery, one of nine brothers, who, with their father, were all remarkable for voracious appetite. One day he was allowed as much to eat as he liked, and between 4 a.m. and 6 p.m. consumed 4 lb. of raw cow's udder, 10 lb. of raw beef, 2 lb. of candles, and five bottles of porter. The narrator remarks: "It is also to be observed that the day was hot, and not having his usual exercise in the yard, it may be presumed he would otherwise have had a better appetite." We fancy the custom still exists in some parts of the country of having hasty pudding eating matches, and at a certain college in Oxford, the following rite obtains or used to do twenty years ago: On Mid-Lent Sunday, the first lesson in the evening is Genesis xliii., which gives an account of Benjamin's mess, which was five times as great as any of the other's. Furmenty was always served in Hall on that evening, and the junior man at each table was considered as Benjamin, and served with an enormous helping. If he ate it all, he could "sconce"—*i.e.*, fine the whole table in sherry—if he could not, he was himself fined. When this custom originated no one knows, but it is probably like so many other customs, a remnant of paganism with a veneer of Christianity over it.—*Lancet.*

ON THE VALIDITY OF THE NEURONE DOCTRINE.

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One might look far to find a concrete example better suited to illustrate the universality of change than the flux and reflux of opinion which is seen among scientists when a large number of them are engaged in different parts of the world in the investigation of similar problems. Doctrines thought to be firmly established are from time to time violently assailed by skeptical antagonists, with the result sometimes, that they totter and fall and have to be replaced by others entirely new. At other times an earlier construction may be retained, though various beams and pillars proven by time to be unessential or even detrimental to its welfare have to be removed and replaced by more sound material. But although, in rare instances, we meet with a doctrinal edifice which has been so well planned by its architect and provided with foundations so solid, a framework so suitably distributed and a superstructure so accurately measured that even the most violent storms of hostile criticism fail to shake it, it is doubtful if a completely stable doctrine can be said to exist at all. The most universally accepted laws of nature are in the end found to be but relative. Almost every one of those now recognized when analyzed is found to be the resultant of a long series of successively modified generalizations. Whenever, therefore, a new hypothesis has been put forward or a new doctrine promulgated, especially in connection with the finer form relations in developing living bodies, it is interesting not only to watch the reception which it meets, but also to follow its subsequent history, the modifications which it undergoes, its destruction, if it be faulty, or its survival, if it be fit. And in these days in which activity in scientific work is so widespread, when authority means nothing and every man is a Pyrrhonist, and that, too often without the accompanying virtues of *ataraxia* and *matriopathia* attributed to the founder of the sect, we have, as a rule, not long to wait.

It is now only seven years (if we arbitrarily choose the date of the publication of Waldeyer's celebrated article as that of its inauguration) since what is known as the Neurone Doctrine of the nervous system was formulated. Let us inquire briefly how it has fared.

Before doing so, however, it may be permissible to recall exactly the principle or principles which it involved; for with the passage of time both friends and enemies exhibit a tendency consciously or unconsciously either to unjustly limit a doctrine or to unlawfully expand it, so that the presentation of it in one man's mind is very different from that entertained by a second and the fundamental conception of each far from being identical with that of its originator.

To understand thoroughly what is comprehended in the neurone conception one cannot do better perhaps than to turn directly to the article of Waldeyer, above referred to. Waldeyer by no means deserves all the

credit for the foundation of the doctrine, for the work upon which it is based had been done, much of it many years before, and the principles of the doctrine had already been laid down by several distinguished anatomists. But for our present purpose his monograph is of especial importance on account of the fact that, in it he brings together in a masterly way the great mass of data (anatomical, pathological, ontogenetic) bearing upon the topic, subjects these to a searching criticism, sifts out the essentials from the non-essentials, sharply defines the conception of the anatomical and physiological unit in the nervous system and gives it a name. I have recently re-read this article in order to free myself from any mental accretions which may have inadvertently adhered to my recollection of it since a former perusal, and feel, therefore, in a position to state without bias what was meant by the neurone conception by Waldeyer at the time at which he wrote.

In the first sentence of the last paragraph of his article one finds the gist of the doctrine. It reads somewhat as follows: "If we review the main advance, made certain by the anatomical investigations discussed, it lies, in my opinion, in the sharper limitation, now possible, of the anatomical as well as the functional elements of the nervous system (for such we have to consider the nerve-units—neurones), and also the discovery of the collaterals with their end-arborizations by Golgi and S. Ramon y Cajal."

Turning back a little farther to the beginning of his summary of the whole matter we find: "The axis-cylinders of all nerve-fibres (motor, secretory and sensory, conducting centrifugally or centripetally) have been proven to proceed *directly* from cells. A connection with a fibre-network, or an origin out of such a network does not occur." Again, "all the nerve-fibres end free with end-aborizations (Kölliker) without the formation of net-works or anastomoses." Combining the latter two statements he continues: "The nervous system consists of numerous nerve-units (neurones) united with one another neither anatomically nor genetically. Every nerve-unit is composed of three pieces: (1) the nerve-cell, (2) the nerve fibre, and (3) the terminal arborescence of the fibre." After a discussion of the probable modes of conduction by means of the neurones, he adds, it would seem almost with prophetic foresight, the following statement: "If we assume with Golgi and B. Haller the existence of nerve-networks the conception is somewhat modified, but we can still retain the nerve-units. The limits between two nerve-units would then always lie in a nerve network and not anatomically at least, be exactly definable with our present methods." And in another place with characteristic reserve the possibility of the existence of a nerve network is not denied. To quote his own words: "Wie die Dinge heute stehen, darf man jedenfalls behaupten, dass der sichere Nachweis anastomotischer Nervennetze noch nicht erbracht ist, und dass die miesten sich für ein Neuropilema aussprechen."

Having thus cleared the way, as it were, by refreshing our memories as to the exact scope of the doctrine, at least as it was conceived by one of its ablest exponents, we are prepared to proceed with the inquiry. In how far have researches since the time of the formulation of the neurone-

conception by Waldeyer in 1891 agreed with its main tenets? Is the neurone-conception still valid in its entirety or has it to undergo serious modification or, finally, has it been proven to be fundamentally false?

A generally entertained conception may be shown to be invalid in one or both of two ways. In the first place, the data upon which the generalization is based may by subsequent investigation be proved to be unreliable, or actually false; in the second place, researches undertaken after a generalization has been made may reveal entirely new and previously unsuspected facts which cannot be brought into accord with it. In either event the doctrine has to be modified, or entirely given up.

To proceed in an orderly fashion, therefore, it will be appropriate first to ask (1) upon what data was the neurone-doctrine founded? and (2) has the reliability of these data been refuted? If the latter question is answered in the affirmative, we need go no further, but if it can be answered in the negative, we have still to consider (3) the possibility of an invalidity depending upon discordance with entirely new discoveries.

It is an experience, no more uncommon for the writer of medical history than for other historiographers, to find in the search for the origin of a doctrine, that long before the time generally believed to be that of its foundation, the ideas comprehended in it have not only been floating in the consciousness of a number of individuals, but that expression has actually been given to them in articles in the bibliography. This is particularly true, as we have already pointed out, of the history of the neurone-conception. In its embryonic form it can be discerned extending far into past decades, and in its growth it has drawn nourishment from the most varied sources. It is not the child of a single parent; on the contrary, its constitution represents a curious germinal admixture and several of the different elements composing it can with justice claim to be of equal value. It is not my intention here to review all the stages in the development of the conception; besides occupying too much time and space the task would be superfluous since in every civilized country one or more neurologists have dealt with the topic in detail. It will be sufficient to mention the results of a few of the more important researches, which by themselves, if true, would suffice for the building up of the doctrine.

In the first place the studies dating from the thirties which established the cellular structure of vegetable and animal bodies might have been sufficient in themselves to permit *a priori* of the construction of an hypothesis that cellular units existed in the nervous system. The difficulty met with in the application of such an hypothesis was twofold. It lay (1) in the relations of the nerve-fibre to the nerve-cell, and (2) in the enormous complexity of the branchings of the protoplasmic processes of the nerve-cell. And although Virchow and others evidently believed in the extension of the cell-doctrine to the nervous system, but little was said for a long time about "units" in the nerve-substance. Even the demonstrations of Remak, Helmholtz, von Kolliker and Deiters, important as they were in showing the origin from cells of a number of axis-cylinders of nerve fibres, were insufficient as a basis for the application of cell-

doctrine to the nervous system. The delay in recognizing the true relations was doubtless furthered by the hypothesis of Gerlach, according to which a large proportion of the nerve-fibres did not arise from cells at all, but were supposed to issue in some obscure way from the extremely fine meshed and delicate nerve network, which his gold method revealed and which he believed to be formed by the anastomesis of great numbers of the finer subdivisions of the protoplasmic processes of the ganglion cells.

It was the embryologist Wilhelm His who first formulated clearly and distinctly the doctrine of the cellular nature of the nervous tissues. Studying the development of the nerve cells in man and animals he concluded early in the eighties that every nerve-fibre arises from a single cell, that this cell is not only the genetic but also the nutritive and functional centre of the fibre, and that all other connections of the fibre are either indirect or arise secondarily. In his study of the neuroblasts he proved that the axone of the nerve-cell was the first process to develop, the dendrites arising at a later period. He was further able to demonstrate that these developing units in the early history of the embryo undergo marked changes in position, some of them wandering long distances from their birthplaces before arriving at a position corresponding to their location in the adult tissues. The individuality of the units at this stage (with the possible exception of persisting intercellular protoplasmic bridges), is the easiest of observations to confirm, and every student who has at his disposal sections of embryo chicks or of early human embryos can convince himself in a few moments of the accuracy of the descriptions of His.

A little later a man of unusually keen vision, the psychiatrist and pathologist Forel of Zurich, one of the ablest of Bernhard von Gudden's pupils, argued in favor of the doctrine of the individuality of the nerve-elements. He was instigated mainly by the epoch-marking investigations of Golgi, which were only beginning to attract attention, but based his plea largely upon the observations which had been made concerning degenerative processes inside the nervous system. In his admirable essay published in the *Archiv für Psychiatrie u. Nervenkrankheiten* in 1887 he reviewed the discoveries of Golgi, and especially emphasized the latter's discovery that the protoplasmic processes of the nerve-cells do not anastomose with one another, and his observations of two types of nerve-cells (a) those with long axones, and (b) those with short axones. Though subjecting some of Golgi's statements to a severe criticism arraigning especially the hypothesis of that investigator concerning the functions of the cells of the two types described, he did not fail to see the importance of the "caprice" of the Golgi method, *i. e.*, the staining of an element only here and there (cell-body with dendrites and axone). It is, however, the utilization by Forel of the studies of secondary degenerations to support the doctrine of the individuality of the nerve-elements that makes his communication all important.

Forel recalled to mind the fact that not only does the distal end of a divided motor nerve-fibre undergo rapid disintegration after section of the fibre (Wallerian degeneration), but also, in contradiction to the Wal-

lerian doctrine, the proximal end undergoes cellulipetal degeneration though much more slowly (von Gudden), when the separation takes place at the point of exit of the motor nerve from the central system. He pointed out further that when degeneration attacks a tract of nerve-fibres, it extends only as far as the termination of the tract. Atrophy of nerve cells and of nerve-fibres beyond undoubtedly often occurs in the form of shrinking of the cells and narrowing of the calibre of the fibres, but this is a fundamentally different process from that degeneration with absorption which characterizes the process in the elements directly involved. He chose for illustration the instructive experiments of von Gudden and von Monakow bearing upon the nature of the paths leading from the retina to the cerebral cortex. If one eye say of a rabbit, be extirpated there is almost total degeneration of the corresponding optic nerve, marked degeneration of the opposite optic tract, and a considerable diminution in size of the opposite lateral geniculate body, due not to a degeneration of the cells which it contains, but to a disappearance of the gelatinous substance between the cells (terminal ramifications of the fibres which have entered from the tractus opticus). On the other hand, if a certain definite region of the cerebral cortex be extirpated (part of the Lobus occipitalis) the resulting changes in the lateral geniculate body are very different. The volume of this necleus is diminished even more than in the former experiment, but microscopic examination reveals the interesting fact that in this instance it is not the gelatinous substance between the cells which has disappeared, but the cells themselves which have vanished. Pathology, therefore, establishes the existence of units; the limits of a given degeneration correspond to the extent of the units affected. Between the retina and the cerebral cortex at least two units are concerned in conduction, one extending between the retina and the optic centres at the base of the brain, and a second extending from the latter centres to the cortex of the occipital lobe.

Even more brilliant and perhaps more convincing to the medical world as a whole, were the striking results obtained by S. Ramon y Cajal, von Kolliker, van Gehuchten, Retzius and von Lenhossék with the method of Golgi, and with modifications of that method. The pictures of nerve-cells and their processes obtained by means of silver impregnations, especially in embryonic tissues spoke strongly in favor of the doctrine of the individuality of the nerve-units. Not only were the findings of Golgi contradicting Gerlach's hypothesis concerning the dendrites confirmed, but the suggestion of Golgi himself that a diffuse nerve-network formed of the collaterals from the axones of cells of Type I and of the branches of the axones of cells of Type II was proven not to be in accord with the facts. From the young neuroblast of the early embryo up to well-developed nerve-cells with their complexly branched processes, every stage in the histogenesis could be accurately followed and so repeatedly did apparent anastomoses of processes turn out on close examination not to be real anastomoses that many of the investigators with this method hesitate to believe that *any* of the appearances thus reported were in reality organic connexions, some even going so far as to deny anastomosis altogether. But while the researches of Dogiel and others

especially with the methylene-blue method, and the studies of Tartuferi with the silver-method established beyond question the fact that anastomoses between protoplasmic processes sometimes at least occur, the observation in normal tissues that with both the methylene-blue method of Ehrlich and the silver method of Golgi and Ramon, single units could often be isolated in their whole extent, other cells and processes immediately adjacent remaining unstained, went far toward contributing, from the purely histological side, a confirmation of the doctrines based upon developmental and pathological studies.

The neurone-doctrine, therefore, was based upon a foundation which was quadruple (1) the *a priori* probability that the nervous system like all other parts of the body is a cellular system; (2) the proof that in the embryo the nerve-cells exist as independent units, many of which are capable of wandering for considerable distances from the site of their origin; (3) the proof that the nutrition of the nerve-cells is most easily explicable from the standpoint of the doctrine which looks upon the nervous system as made up of units, which are not only anatomical, but also physiological, since in pathological degenerative processes affecting a given unit or set of units, degeneration of a given type extends only within the limits of that unit or set of units, any degeneration of other units being of an entirely different nature, and when resembling the former occurring much more slowly; and (4) the histological demonstration of the fact, that, for reasons as yet too subtle for analysis, sometimes one unit, sometimes another may be picked out by a particular method of staining or impregnation and brought exquisitely into view, others near by remaining only partially stained or entirely unaffected. The doctrine, too, agreed well with all the known facts discovered by Edinger, Herrick and others in the great field of comparative neurology.

Have these data been proven to be unreliable? With regard to the cell doctrine it may be said to be still universally held although it is true that it does not explain all known facts and that here and there a distinguished biologist draws attention to its "inadequacy." The embryological researches of His concerning the neuroblasts have been manifoldly confirmed by his own and by other methods. Not until we come to the studies of degenerations inside the nervous system do we find any appearance of discrepancy. The doctrines of von Gudden and von Monakow on the whole however still hold. Lesion of a given set of neurones causes degeneration of the typical and generally recognized sort (that revealed by Weigert's method) only within the domains of that set. If large numbers of neurones belonging to a given system degenerate and are absorbed, there may, it is true, after the lapse of a very long time be total atrophy with absorption in neurones of another order (as in the case reported by Flechsig and Hoesel in which the thalamo-cortical neurones of the general sensory path had been injured by a lesion involving the central gyri, and after many years many of the neurones, the axones of which go to make up the internal arcuate fibres of the medulla oblongata and the fibres of the lemniscus medialis, had entirely disappeared). But as a rule the tertiary change is one of shrinking and diminution of the calibre of the medullated fibres rather than complete disintegration

and absorption (as the condition in which the brachium conjunctivum is ordinarily found after extensive disease of one cerebral hemisphere fully illustrates.

Since 1891 a vast deal of work upon degenerations has been done with two methods which are especially well adapted for yielding information especially in tissues obtained too soon after the lesion to be of valuefor study by the method of Weigert. The first of these methods, that of Marchi, thus far speaks strongly in its results for the validity of the neurone-doctrine. There is no evidence from its use that a degeneration following an injury extends beyond the limits of the neurone or neurones which the lesion involves. On the contrary, the method is mainly of value since it permits the following of a set of diseased fibres to their termination. By its aid, the exact course and distribution of Gowers' tract as far as its ending in the cerebellar worm have been followed. This is only a single, although an important example, of its efficacy.

Investigators who have employed the second method, that of Nissl, and its various modifications have been extraordinarily active. The procedure is an extremely delicate one, and changes hitherto entirely unsuspected have been detected by it in various pathological conditions. Through it, in one respect at least, the neurone conception has been supported; for the method has demonstrated that when any portion of an axone or its terminal ramifications is diseased, the whole neurone to which that axone belongs suffers, the changes which occur in the "stainable substance" or "tigroid" of the cell body and dendrites of a neurone after lesion to its axone being now generally recognized and appreciated. In another respect, however, the application of the method of Nissl has brought into view a phenomenon which at first glance appears to be opposed to the neurone-conception. It has been found by Marinesco (though curiously enough he interpreted his observation incorrectly), by Warrington, and by van Gehuchten, that in certain instances the cutting through of a sensory nerve between its ganglion and the central nervous system (or in terms of the neurone conception, solution of continuity of the axones of sensory neurones of the first order) is followed by changes in the nucleus terminalis of the nerve quite like those which occur in the cells of the peripheral ganglion itself after section of the sensory nerve between the ganglion and the periphery of the body, or like those which follow in a motor nucleus upon section of the root fibres issuing from it. Highly interesting as the phenomenon is, and as yet insufficiently explained, it can hardly be said to, in any way, invalidate the neurone-conception. The fact that an injury to one individual in a society leads to the detriment of certain other individuals with whom the former individual was most intimately associated, cannot be considered as disproving the idea that the society is composed of individuals. And that in the case of the neurones under consideration the character of the injury in the peripheral and in the central neurone differ is obvious from the subsequent history of the two neurones in animals permitted to live for some time after the injury. In the one instance typical Wallerian degeneration with absorption quickly takes place, in the other there is, at most, slow secondary atrophy.

Histologically, there have been since 1891 repeated confirmations of the earlier single observations of coarse anastomoses of dendrites. In mammals, the finding except in the retina is rare, though in lower forms, according to the recent observations of Bethe, Nussbaum, Schreiber, and Holmgren, it appears to be more common. I have myself seen it in the nervous system of rabbits, and have observed, what others have seen also, namely, the partial fusion of the cell-bodies of two neurones. But these unusual conditions, even were they common, are surely of but little consequence when brought forward as arguments against the individuality and independence of the nerve units. If one thinks for a moment the unreasonableness of the objection becomes obvious, for who would consider seriously the argument of an anthropologist who contended that the human race did not consist of separate units and individuals, on the ground that the cases of double malformations like the Siamese twins, the Janus-headed monsters and the various instances of epignathi, thoracopagi and *foetus in foetu* are known to occur. Even if in the heart of Africa somewhere we should come to find that there existed a terrible and swift race such as Plato makes Aristophanes describe in the *Symposium*, we doubt very much if we should be willing to give up the general view that humanity is a mass of multiple units, though doubtless we should have to modify our conception as to the possibility of variety in the units, or admit a bond of union between units more intimate than that to which we are accustomed.

On the whole, however, it may be said with fairness that the control instituted by hundreds of histologists in various parts of the world has, practically in every instance in which the method of Golgi or the method of Ehrlich has been employed, gone to confirm the conception that the neurone is a unit in the sense of Waldeyer.

Passing now to the last inquiry, let us examine the original contributions dating since 1891 and see if in them we can find any facts which necessarily nullify the validity of the neurone-conception. In this connection only two researches present themselves which are likely to be brought forward by its antagonists. One of these is the investigation of Held concerning the kind of relation which exists between the terminal branches of an axone of one neurone, and the cell bodies and dendrites of other neurones with which they are connected; the other is the much-talked of research of Apàthy emanating from the Zoological Station at Naples.

Held's communication is one of very great importance, representing, as it does, the most careful application of modern cytological technique to the study of the nerve-cell and its processes. His findings concerning the tigroid and the ground substance of the protoplasm, brilliant as they are, do not concern us here. The observations of Held, however, which must here be taken into account are those in which he describes fusion of the terminals of the axone (including the end-ramifications of the collaterals) of one neurone with the protoplasm of the dendrites and cell-bodies of neurones of a high order. Held agrees with other investigators that in embryonic tissues and in early youth the neurones are entirely independent of one another (except for an occasional dendritic or other

anastomoses). In these stages, which, by the way, correspond to those of the majority of Golgi preparations, he finds, in areas especially well suited for the study (*e. g.*, the nucleus of the trapezoid body) that when the terminal of an axone comes into contact relation with the cell-body of another neurone, one can always make out where the protoplasm of the one neurone ends and where that of the second begins, inasmuch as the line of demarcation is more refractive than the adjacent protoplasm. Held finds, however, that this refractive limiting line is not demonstrable in the adult, and comes to the conclusion that during the process of growth the protoplasm of related neurones fuses. Indeed, in some instances, there is evidence that the terminals of one neurone plunge deep into the cell-body of another neurone and even come into close proximity to the nucleus of the latter. He describes the relation as one of "concrescence." Held's pictures are very convincing and one must certainly admit that his work proves the existence of much more intimate relations among the neurones than the studies made with Golgi's method had led us to suspect. And, yet, in following Held's various articles closely one finds that this histologist notwithstanding the disappearance of the refractive line of demarcation is able *even in adult stages* to distinguish the protoplasm which belongs to the terminal axone or collateral of the one neurone from the protoplasm of the cell-body or dendrite of the other. By a lucky hit Held seems to have discovered a method of staining certain minute particles (his neurosomes) in the ground substance of the protoplasm of the neurones—a method which stains them intensely and leaves the other structures but dimly or not at all tinged. It would seem that, according to his report, the neurosomes are far more closely aggregated in the axis-cylinder and especially in its terminal branches than they are in the protoplasm of the cell-body or of the dendrites of a neurone. Thus, in the olfactory glomeruli it is very easy to distinguish the axones of the Nn. olfactorii from the dendrites of the mitral cells and of the brush cells, both of which, as is well known, enter into the formation of these curious bodies. Again in the molecular layer of the cerebellar cortex Held's neurosome method outlines accurately the position and relations of the terminals of the axones which climb trellis-like along the trunks of the huge limbs of the cerebellar forest which is made up of the dendrites of the Purkinje cells. Held's contributions, therefore, far from disproving it, are confirmatory of the neurone-doctrine; and, as a matter of fact, Held represents one of the ablest of the German adherents of the doctrine.

Adverting finally to the investigations of Apáthy, one finds in them the greatest stumbling block to those who perhaps an account of lack of familiarity with the exact principles of the neurone-doctrine and the history of its foundation incline to think that it is jeopardized. A skilled technician, well known to the biological world as the author of a treatise on the technique of animal morphology, and generally recognized as a most careful and painstaking worker at the Naples Marine Laboratory, after several years of specially directed study during which he has elaborated an entirely new mode of bringing certain finer structures within the nerve cells into view, has finally in a long article of more than 200 pages presented the main results of his investigations upon the nervous tissues

to the scientific world. While Apáthy has studied vertebrate tissues to a limited extent the majority of his observations have been made upon invertebrates, especially upon the leech and the earthworm. His technical methods need not be entered into here. Suffice it to say that for the most part his technique is original with himself, consisting in addition to a method of staining with methylene blue of an haematein method, and especially modified gold-chloride method which can be applied not only to fresh tissues, but to fixed tissues as well. To sum up his views in a nutshell, Apàthy has been convinced for some twelve years that the nervous system is composed of two varieties of cellular elements entirely different from each other—nerve-cells and ganglion cells. The nerve-cells, the architecture of which is quite in accord with that of muscle-cells, give rise, he thinks, to neuro-fibrils. A neuro-fibril in turn passes out of a process of a nerve-cell and then goes through a number of ganglion cells and ultimately after leaving the last ganglion cell with which it is connected passes more or less directly to a muscular fibre or to a sensory cell. The neuro-fibrils are, as conducting substance for the nerve-cells, what the muscle-fibrillae are as contractile substance for the muscle-cells. The pathways to be followed by the neuro-fibrils are predestined from the earliest embryonic stages, for they correspond, according to Apàthy, to the intercellular protoplasmic bridges.

Each neuro-fibril is, Apàthy states, made up of a large number, near its origin at any rate, of "elementary fibrils," and in the course which it follows elementary fibrillae are being given off at short intervals until finally the neuro-fibril itself may be reduced to a single elementary fibril.

The ganglion cells through which the neuro-fibrils pass, and which, if Apàthy is correct, supply the force which is to be conducted along them, appear to be complicated in structure. Thus in the leech the body of the cell can be divided into a series of more or less concentric zones. At the periphery are two zones, an outer and an inner, consisting of neuroglia, which are more or less separated from the cell body proper by the so-called outer alveolar zone. The periphery of the cell proper consists of an outer chromatic zone, inside which is an 'inner alveolar zone." Inside this again is an inner chromatic zone, which in turn is separated from the nucleus by the so-called-perinuclear zone. In the latter is situated a small centrosome-like body. Inside the ganglion cells a reticulum of fine fibrils derived from the neuro-fibrils in transit can be stained a beautiful deep violet color by Apàthy's chloride of gold method,

According to the size of the cells and to the arrangement of the neural reticulum inside, Apáthy distinguishes in the leech two main types; (1) the large ganglion cell and (2) the small ganglion cell. It is to be borne in mind that the ganglion cells in this animal are unipolar, the so-called stem processes giving off near the cell-body a number of processes which appear to be comparable to the dendrites of higher forms, the main continuation of the process representing the axome.

In the large type of ganglion cell the relations are described by Apáthy somewhat as follows: the neuro-fibrils arriving by way of the pyriform process of the cell enter the protoplasm breaking up into elementary fibrils which diverge meridionally to ramify in the external chromatic

zone. (The cells of this type possess no distinct internal chromatic zone.) Free anastomosis among the elementary fibrils inside the ganglion cell appears to be the rule. Having arrived at the side of the cell most distant from the stem-process the neuro-fibrils turn about and again plunge through the cell converging to pass out of it by way of the pyriform process, which is thus seen to carry two sets of neuro-fibrillae, which Apáthy believes serve in the one case for cellulipetal and in the other for cellulifugal conduction.

In the small type of ganglion cell the relations, it would appear, are somewhat different. Here the pyriform stem-process contains a single thick neuro-fibril in its centre which Apáthy assumes to be cellulifugal and motor, and a number of finer neuro-fibrils peripherally placed which he believes to be cellulipetal and sensory. He describes the finer peripheral neuro-fibrils as follows: They are seen to enter the cell-body and passing out to the peripheral part of its protoplasm there to break up into a complicated plexus composed of anastomosing elementary fibrils in the outer chromatic zone. From this peripheral plexus there pass through the "inner alveolar" zone radial branches to the internal chromatic zone, in which is to be seen another fine plexus of elementary fibrils which anastomosing and converging finally form the single strong motor neuro-fibril, which passes out of the cell through the very centre of its pyriform process.

In other animals studied by Apáthy there are cells with definite dendrites entirely separate from the axone and in these the celluliptal neuro-fibrils enter by way of the dendrites, ramify and anastomose freely inside the cell body and then, re-uniting, take their exit from the cell by way of the axone. Similar relations exist in the ganglion cells of the vertebrates which he has studied thus far. His descriptions of the neuroglia and the relations of the glia cells to the nerve-cells, interesting as they are, need not now detain us since they have but little bearing, if any, upon the topic under discussion.

As to the relations of the neuro-fibrils to sensory surfaces on the one hand and muscular tissue on the other, Apàthy makes very definite statements, especially in the last chapter of his article. A neuro-fibril entering the cytoplasm of an epithelial cell of a sensory surface in the leech breaks up (very much as in a ganglion cell) into a finer reticulum composed of the elementary fibrils. A large number of the constituent fibrils, however, perhaps the majority, leave the cell in order to take part in the formation of a complicated interepithelial fibril-plexus. For the interesting details concerning the innervation of the superficial epithelial cells and the subepidermal sense-cells, the original article should be consulted. In the muscular tissue, however, a very different distribution of the neuro-fibrils is encountered. A neuro-fibril here also, breaks up into elementary fibrils which ramify inside the muscle-cell. But although many of the fibrils emerge from it, instead of forming a complicated reticulum among the muscle-cells they pass on to enter and innervate other muscle-cells. The neuro-fibril of a single axone would, therefore, through its elementary fibrils, innervate perhaps a considerable number of muscle-cells.

One nerve-cell may, Apàthy states, be put into continuous relation by means of one or more primitive fibrils with several ganglion cells, and

one fibril can be connected with a number of sense cells. But while one ganglion cell may be connected with several nerve-cells, a sense-cell is never connected with more than one nerve-cell.

From what has been said, the main tenets of Apàthy may be gathered. And we must now ask whether granting all his findings, and even his theories, to be in accord with the facts, the neurone-doctrine would be nullified by them. Although the opinion has been expressed that it would have to be entirely given up, or very seriously modified, I must confess that such a view of the matter would seem to be, to say the least, premature. That the neurone-conception, as it has been held by many, would have to be materially altered there can be but little doubt, but many views of the neurone-conception and what Waldeyer actually defined it to be are by no means identical. Nor can it be admitted, as many authorities, including apparantly Apàthy himself, appear to assume that, in the research emanating from the Naples laboratory we have a confirmation of the doctrines of Gerlach, inasmuch as Gerlach's diffuse nerve network and its relation to axis cylinder processes and dendrites involved conceptions somewhat different from those which Apathy takes the responsibility of fathering. Apàthy's *Elementargitter*, however, stands very close to the conception of Gerlach.

It would seem, then, that were Apâthy's observations and theories entirely in accord with the facts, the neurone-doctrine as conceived by Waldeyer would not have to be seriously modified, much less abandoned. Furthermore, one would be far from willing to grant without further proof either that there is so much, as many seem to think, that is novel in his actual observations, or that the assumptions based on the findings especially with regard to function have the force of necessary postulates. Much of the apparent novelty of his results depends upon the facts that, in the first place he is dealing in the main with tissues, which are not very familiar to many neurologists, namely the nerve-cells and fibres of invertebrate animals, and in the second place his publications thus far consist principally of an objective description of his findings with particular methods devised by himself, and pay but little attention to the work of other investigators, so that the casual reader may, from lack of adequate comparative data, fail to distinguish between actually new discoveries, and descriptions which may without unfairness be found to coincide in many respects with those of other students working with different methods. I feel convinced that when Apathy fulfils his promise of supplying us with a still more lengthy communication; in which the results of other investigators are to be compared with his own and properly valued, that those who have been inclined to look upon his observations as entirely unique, will be disabused of their error. That many of his observations are entirely new must be frankly admitted; that the technique he has introduced is altogether original and evidently highly valuable and well worthy of extensive application and widespread control, must be freely granted. The remarks here made are not intended to be a critique of the work of Apàthy, but rather to counteract an impression which seems to be gaining ground that the whole or, at least, a large part of our previous ideas concerning the architecture of the

nervous system have been subverted by the results of his studies, Are we not more just and, at the same time, kind to Apáthy if we simply accept, gratefully and for what they are worth, the wealth of new facts with which he has provided us, than we should be were we to give currency to the impression that they are entirely revolutionary, and out of accord with the great principles which sedate neurologists believe to be incontrovertibly established? All that I wish to say, and that without any desire to detract from the merit of his laborious researches, is that an attentive analysis of the actual findings of Apàthy shows that there is far less absolutely novel in them than many seem to imagine. For, when one thinks of it, the form of the cells in invertebrates has long been known, the unipolarity of the elements has been generally figured and described, the fact that the pyriform process corresponds to both axis-cylinder process and dendrites is stated in the text-books, the irregularity in the distribution of the "chromatic substance" in the cells is easy to make out in Nissl preparations, the existence of the so-called intercellular bridges, if not for the cells in the nervous system, at least for many of the cells of the body, if taught and demonstrated in every histological laboratory, and the fibrils in the processes and the reticula in the cell-body have been the object of study and the topic of discussion, too often of bitter polemic, for at least two generations. The very neuro-fibrils upon which Apàthy bases his doctrine were first seen, as the author himself states, by Kupffer. The essential novelties in Apàthy contributions, in addition to his modifications of technique, and his wonderful description of the details of the fibrillary appearances to be met with inside the cells stained by his methods, for which all must be deeply grateful, are his deductions and hypotheses, of which all, in my opinion, may be permitted, at least for the present, to be judiciously skeptical. How does he know, for example, that the structures which stain violet by his gold method actually represent the conducting-element in the nervous system? It may be true, but the Scotch verdict "not proven" is here most applicable. Again, how does he know that the nerve-cells build the conducting element, and that the ganglion cells supply the force to be conducted? These *may* be the functions of these two sets of elements, but we must not neglect to point out that the evidence is not yet convincing. And were it all true, is there any reason to doubt that neurones will continue to degenerate as units, as heretofore, that the nervous systems of our children will continue to be built up during development of repeatedly dividing neuroblasts in the same way with which we are familiar, or that Golgi's method in the thirtieth century will have lost its power of demonstrating here and there a particular nerve-unit or neurone in its entirety? Again would the confirmation of the existence of continuous fibrils or fibril-systems passing through a whole series of nerve elements necessarily militate against a unitary conception? I must say that I can see no reason why it should. We do not regard the connective tissues as any the less cellular, because they build white fibres, yellow elastic fibres and membranes and reticulum; we do not look upon the studies of Weigert and Mallory, which deal with neuroglia-fibrils and their relation to the neuroglia cells, as subversive of the doctrine that neuroglia cells exist, nor do we, because Kromayer and others have demonstrated, by particular

methods, fibres running through the bodies of a number of epithelial cells, cry out that the cell-doctrine must be given up. There may be units other than cells, and in all probability there are; there may be, and probably are, in the nervous system units other than those generally described, and it is important that we should find out all that there is to learn about them; but that the human body is made up largely of a mass of cells, and that the human nervous system is made up largely of great numbers of cell-units, the so-called neurones, would seem to be facts too firmly established, ever to be utterly overthrown.

THE USE OF MORPHINE IN BRIGHT'S DISEASE.

Sydney Ringer, of London, thus concludes a paper on this topic in the *Journal of the American Medical Association* of October 8, 1898. He says that Osler writes concerning uremia, "for the restlessness and delirium morphine is indispensable. Since its recommendation by Stephen Mackenzie in uremic states some years ago, the author has used this remedy extensively and can speak of its great value in these cases. He has never seen ill effects or any tendency to coma follow." Ringer's observations entirely confirm these statements, and yet the use of morphine in Bright's disease is denounced with little less than horror by most practitioners, though they all confess that they have never tried it—that, indeed, they dare not do so. Morphine hypodermically employed is of conspicuous benefit in the shortness of breath of uremia. This may be due to different causes. With some patients the compensatory hypertrophy gives way and they suffer from cardiac dyspnea, in all respects similar to that from valvular defects with insufficient compensation, notably sleep in aortic regurgitation. The paroxysmal shortness of breath prevents sleep; on falling asleep they are soon wakened by distress of breathing. The patient is compelled to start up in bed panting for air, or the sleep may be distressed end harassed by Cheyne-Stokes breathing. This distressing condition, whether due to deficient compensation in Bright's disease, or to valvular defects, is almost invariably relieved by hypordermic injections of morphine, and several hours' refreshing sleep are secured, to the great relief and comfort of the patient, who on the following day is refreshed, and takes, digests, and assimilates his food better. Morphine can scarcely be too highly recommended in such a condition, and although it does not cure, it delays the end and greatly lessens the distress of the declining days of life.

Uremic asthma, again, yields promptly to hypodermic injections of morphine. On the other hand, persistent distress of breathing may be due to dropsy, the lung being hampered by an abundant serous effusion into the cavity of the chest. It need scarcely be said that such a condition is not improved by the use of morphine.

The headache and sleeplessness occurring in uremic patients can generally be removed by the hypodermic injection of morphine. The writer has not given this treatment in uremic convulsions or coma, but he has largely used it in many cases of uremia with other troubles, and is sure that morphine may be given to such patients with every prospect of benefit and no risk of harm.

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Editorial.

CHRISTIAN SCIENCE.

Were it not for the fact that one or two prominent personages, noted for more than ordinary ability—Mr. Harold Frederic, for example—had fallen victims to the so-called "Christian Science" treatment of disease, one might suppose this doctrine to be one of those things which Divine providence permits in the great course of natural events to destroy "the unfit," and so let it pass as beneath the notice of a medical journal. Man, however, being in a large measure above nature, feels called upon to protect and endeavor to preserve human life in all its conditions. If it be really a fact that the leading disciples of this fad are sincere, one should have some pity for them. But when they put forth their blasphemous pretensions that they can heal "consumption in its last stages," "malignant tubercular diphtheria, and carious bones that could be indented by the finger," etc., as the high priestess, Mrs. Eddy, asserts that she has done, while they are at large and continue to ply their trade, one rather pities their misguided dupes; feeling at the same time that the leaders in this new psychic phenomenon of defective minds should be placed under confinement. The New York *Times*, of which paper Mr. Frederic was the London correspondent, in an editorial asks: "Why not enforce the law against these homicidal charlatans who prac-

tise their hocus-pocus on patients sick with typhoid fever, heart disease and consumption?" And further: "They kill, and, so far, kill unpunished.

The experience of Massachusetts shows that it may be difficult to draft a statute that will net these pests. Common sense shows that new legislation is not needed. Existing law will protect the ignorant from their deadly impostures if it be enforced."

This has been tried, it appears, in Ontario, and failed. In Rhode Island, too, the supreme court decided that the acts of a defendant in a case did not constitute the practice of medicine. In Nebraska the court held that the practice, although not a practice of medicine as the term is usually understood, is a violation of the law, because it is a treatment of physical and moral ailments included in the definition of the practice of medicine by the express words of the statute.

It, therefore, seems that court decisions will depend largely, if not entirely, on the wording of statutes as to what constitutes medical practice. Would there be any chance to get the Ontario Medical Act so amended as to cover such cases?

In the case of Frederic's death, the *Law Journal* says: "The prosecution which followed on the verdict of the coroner's jury of manslaughter against the person who applied the Christian Science completely failed, the Justice refusing to commit."

In a case of Regina *v.* Senior the prisoner was a member of a sect known as the "Peculiar People," and was indicted for the manslaughter of his child by refusing, on account of his tenets, to provide medical aid. He was sentenced to four months' imprisonment with hard labor; the decision resting not on any medical statute, but on an Act for the Prevention of Cruelty to Children. It appeared that the court regarded the deprivation of proper medical treatment to be as criminal as the neglect to provide food.

A "christian scientist" in Cincinnatti, who allowed a man to die of typhoid fever, with only prayer as a course of treatment, it is reported, has just been convicted in the police court for practicing medicine without a licence.

It would seem that, while statutes may assist, the education of the public alone will entirely suppress this as well as other forms of quackery in medicine.

Dr. C. A. L. Reed, member of the Ohio State Medical Board, is conducting a spirited campaign against all sorts of medical quackery. In December last he gave an address on "Christian Science, a Sociological Study," before the Northwestern Ohio Medical Association. The Association passed a resolution "That Dr. Reed is hereby requested to submit his address. . . for publication in such form that it may become available, at small expense, to physicians, clergymen, educators, and others for distribution in their respective communities." The address has been published in a thirty-two page pamphlet, and its free distribution as indicated would doubtless assist in suppressing the evil. The St. Paul's *Medical Journal* says: "Within its pages is plenty of food for thought, and if it could be put into the hands of every intelligent layman, who has been tempted to lend his moral or financial support to these "perse-

cuted" healers, there would be many less places in the ranks vacant at the next roll-call of their supporters."

Dr. Reed concluded his address as follows: "Permit me to urge that, like the clergy, and like educators in general, the medical profession has a duty to perform in correcting the unfortunate conditions which I have delineated. Secure in their well-earned positions, physicians have a natural disposition to watch with good-natured interest these evanescent phases of ever-recurring phenomena. . . . Concerned, however, as they are with truth and humanity, duty demands that physicians, entrusted as they are, too, with the welfare of their respective communities, shall not hesitate to speak those words of knowledge that may correct the erring ways of misguided zeal, and protect the innocent from dangerous imposition."

Is it the duty of the profession in Canada to take some such action?

DEATH OF DR. GEORGE HEROD.

In the death of Dr. George Herod, of Guelph, Ont., which took place on Wednesday, January 25th, after a relapse from an attack of la grippe ending in pneumonia, the province of Ontario has lost one of its oldest practitioners and the city of Guelph one of its respected physicians.

The deceased was born in Blackburn, Lancashire, England, May 8th, 1827, and was educated at private and boarding schools in Mansfield and Birmingham. He came to Canada in 1840. He studied medicine under Drs. Orton and Wm. Clark and attended medical lectures at King's College, Toronto. He passed the Upper Canada Medical Board in July 1847. Dr. Herod then took charge of the Emigration Hospital at Hamilton, which he resigned the following year to commence practice at Georgetown, Halton County, where he remained until 1854, when he removed to Guelph and entered into partnership with the late Dr. Wm. Clark, M.P. He soon built up a good practice which in those days covered a radius of thirty miles.

Dr. Herod was County Coroner and Gaol Surgeon for 54 years and was appointed Surgeon to the Wellington Battalion of Volunteer Militia upon its organization. At the time of his death he was president of the Waterloo and Wellington Medical Association.

In his early years he took a deep interest in municipal affairs and in 1870 was elected Mayor of Guelph. In politics Dr. Herod was a staunch Conservative and did active work for the party.

He leaves one son and one daughter to mourn his loss, his wife having passed to the great beyond only about a year ago.

AS AN ANALGESIC IN MYELITIS—

℞ Ichthyol 0.50
Aquæ destil. 10
M. S. Inject one cubic centimetre every second day.

—DUJARDIN-BEAUMETZ.

THERAPEUTIC HINTS.

Relief from Itching Due to Bites of Insects and Vermin is said to be obtained if several repeated applications of formalin be made to the spot, the fluid being allowed each time to evaporate. The smarting caused if the spot be excoriated is relieved by water. The soothing effect is immediate, and beyond a hardening of the skin no objective results will be noted.—*Gonin.*

The Rigidity of the Perineum.—SOUTHWORTH claims that local application of the following mixture will effectually hasten the relaxation of a rigid perineum during labor:

℞ Chloroform.....parts 2
Etheris.....
Eau de Cologne.. } aa.....parts 1
M. Sig. External use.

For Bronchitis and Pulmonary Congestion.—Occurring in the course of grip in children, the following formulæ are recommended, the internal treatment being aided by the application of sinapisms and dry cups to the back:

1. ℞ Tinct. aconiti.....gtt. v-x
Sodii benzoatis.....gr. xv-xlv
Syr. lactucarii.....*m.* xv-℥iiss
Syr. aurantii flor.....℥v
Mucilag acaciæ.....℥iv
M. Sig. Two teaspoonfuls every two hours.

2. ℞ Ext. cinchonæ.....gr. xxx
Terpin hydratis.....gr. xv
Spts. vini gallici.....℥v
Syr. aurantii flor.....℥i
Aq. melissæ.....℥ii
M. Sig. Two teaspoonfuls every hour.

For Erythematous Lupus.—UNNA frequently employs medicated collodion painted over the affected area from two to four times a day. The collodion used for the preparation must have a neutral, not an acid reaction.

℞ Saponis viridis.....parts 2-4
Collodii flex.....parts 20.

℞ Saponis viridis
Ac. salicylici.. } aa.....parts 2
Collodii flex.....parts 20.

To be used if the skin shows much irritation:

℞ Ichthyol.....parts 5
Collodii flex.....parts 20.

STOMATITIS IN SMOKERS—

℞ Salol 1
Tinct. catechu 2
Spir. menth. pip 50
M. S. A teaspoonful in a glass of warm water as a mouth wash.

IN THE BEGINNING OF PULMONARY TUBERCULOSIS—

℞ Hydrarg. bichlor 1
Aquæ destil 1,000
For subcutaneous injection in the suraspinous and infraspinous fossæ. Also useful in skin tuberculosis.—DUBOIS.

HAY ASTHMA, with cough and difficult expectoration following exposure—

℞ Ammon. chlorid ..... ʒ iv.
Tinct. hyoscyami,
Syr. scillæ comp,
Syr. senegæ,
Syr. tolutanæ ..... āā ʒ i.
M. S. Teaspoonful every three hours. —DR. ESHNER.

PELVIC CONGESTION—

℞ Magnes, sulphatis ..... ʒ viiss.
Ferri sulphatis ..... ʒ ij.
Manganesii sulphatis ..... ʒ ij.
Acid sulphur. dil ..... ♏ xlv.
Aquæ destil ..... ʒ iv.
M. S. A teaspoonful before breakfast in a wineglass of water.
—*Riforma Medica.*

WHOOPING-COUGH—

℞ Tinct. belladonnæ ..... ʒ ij.
Phenacetin ..... ʒ iij.
Spts. frumenti (q. s. solve phenacetin) ..... ℥ i.
Fld. ext. castaneæ ..... ℥ vi.
M. S. Teaspoonful every three hours until the face flushes; then every three, four, or six hours, as needed to control the cough, in a child of six years.
—DR. R. A. LANCASTER, *Florida Health Notes*, December, 1898.

LOCOMOTOR ATAXIA—

℞ Ferri lactatis ..... ℈ ij.-iv
Ext. cinchonæ ..... ʒ i.-℈ iv.
Ext. nucis vomicæ ..... gr. v.-xv.
Ext. gentianæ ..... q s.
M. ft. pil. xl. S. One or two as a tonic after three meals daily.
—EMB.

TUBERCULOUS LARYNGITIS—To relieve the vomiting following as the result of a morning's bout of coughing—

℞ Menthol,
Sulphuric ether,
Ol. pini sylvestris,
Tinct. iodii.....āā ℥ ij.
Tinct. benzoin. co.....ad ℥ ij.

M. S. Ten or more drops to be dropped on the sponge of an oro-nasal inhaler, to be worn indoors as often and as long as is convenient. —DR. W. FOWLER, *Intercolonial Medical Journal of Australasia*, October 20, 1898.

SIROP DE L'ENFANT JÉSUS.—This calming syrup, employed in young children for the relief of insomnia, convulsions, etc., is said to represent in each teaspoonful—

℞ Potass. brom.,
Sodii brom.,
Ammon brom,
Calcium brom.....āā 0.05 cgm.
Syr. belladonnæ (Fr. Cod.)..... 1 gm.
Syr. aurantii flor..... 5 "

Dose—One to four teaspoonfuls according to age.
—*Bull. de Pharm. de Lyon.*

GOUTY ARTHRITIS.—In the acute form rest is recommended, with local applications for the relief of pain. The following has been extensively used—

℞ Atropinæ..... gr. i.
Morphinæ..... gr. viij.
Aquæ..... ℥ i.

A piece of lint soaked with this lotion is laid over the inflamed point, covered with oiled silk and absorbent cotton. The constitutional treatment for gout must be carried out.—J. W. MACDONALD.

IRRITABLE BLADDER AFTER CONFINEMENT—

℞ Salol.
Tinct. hyoscyami.....āā ℥ ij.
Infus. buchu.....q.s. ad. ℥ vi.

M. S. Tablespoonful three times a day.
—DR. W. E. FOTHERGILL.

IN IRRITABLE UTERUS, DIFFUSE PELVIC PAINS, and hysterical neuroses in various parts of the body—

℞ Potassii bromidi.....℥ i.
Aquæ.....℥ i.

M. S. Use as a vaginal injection. —DR. MUNDE.

EPITOME OF CURRENT LITERATURE.

MEDICINE.

Tetany in Dilatation of the Stomach.—Sievers (*Berl. Klin. Woch.* August 1 and 8, 1898) reports two fatal cases of tetany. Tetany occurs most often in gastro-enteric disorders, though it is not limited to them In both the writer's cases it was associated with extreme dilatation of the stomach, caused by pyloric obstruction from the scars of old simple ulcers. In both the women, who were 21 and 42 years old, it began suddenly with cramps and pains in the limbs, and proved fatal within a few hours. There were carpo-pedal spasms, opisthotonos, tonic contractions in various muscles of the body, and fever. The abdominal muscles were flaccid. There was no trismus at first, though in one case it appeared towards the end, which was preceded also by cyanosis and unconsciousness.

The connection between tetany and dilatation of the stomach has lately aroused considerable attention. Though very rare there are nearly forty known cases. The combination is extremely fatal, the mortality being about 70 per cent. The etiology of tetany is obscure. That it is reflex is supported by the fact that it occurs in conjunction with intestinal worms and other irritants. Collier (*Lancet*, vol I, 1891, p. 1251) produced an attack by washing out the stomach, and others have seen the same effect by simply percussing over it. Frankl-Hochwart, from some of its symptoms, such as fever, etc, and from the fact that it occurs chiefly during certain months—December to April—supposed it to be a specific infective disease. The latest theory is that of Bouveret and Devic, who find that tetany of gastric origin, usually occurs in patients suffering from hypo-secretion of hydrochloric acid, and have concluded that it is a complication of the chronic form of Reichmann's disease. Sievers has been able to collect twenty-seven fatal cases of tetany with gastric dilatation, which were examined post-mortem, and finds that in most cases the dilatation was secondary to stricture of the pylorus or duodenum from ulcers of their cicatrices. This might be thought to support the views of Bouveret and Devic as it is precisely in such cases that hyperchlorhydria occurs, but occasionally hydrochloric acid is found by analysis to be completely absent. Sometimes the stricture is due to cancer, when, according to modern views hydrochloric acid is deficient. The writer believes the most satisfactory theory to be that which explains the tetany by an anto-intoxication from the alimentary canal.

Xerostomia, or Mouth Dryness.—Since the publication of the earlier cases of this somewhat rare affection by Mr. Jonathan Hutchinson and the late Dr. Haddon, in the *Transactions of the Clinical Society of London* in 1888, some additional cases have been observed. Professor Fraser (*Edin. Hosp. Rep.*, 1893, Vol. I.) describes the case of a young woman who had suffered from dryness of the mouth for eighteen months. A

special feature was associated dryness of the nose and eye-balls, so that she could not shed tears. A tabulated account of all the cases recorded up to 1893 is given. Since that date a few further cases have been recorded. At a meeting of the Clinical Society of London, February 6, 1895, Battle (*Brit. Med. Jour.*, London, February 16, 1895) showed a woman who had suffered for five years from mouth-dryness, which was associated with intermittent attacks of parotitis. Every three or four weeks during the last two years the submaxillary glands had become enlarged.

Dr. Thomas Harris, of Manchester, (*Am. Jour. Med. Sc.*, Phila., March, 1898), has reported another case, which he had previously shown in 1894. Both parotid glands had been enlarged during the three years in which the mouth-dryness had existed. They were uniformly enlarged and of firm consistence, and pain and tenderness were entirely absent. The orifices of the ducts appeared natural; firm pressure along the course of each expressed glairy mucus. There was no associated enlargement of the sublingual or submaxillary glands, nor was there any affection of the lymphatics. In this patient there was also a slight dryness of the mucous membrane of the nose, and both taste and smell were interfered with. There was an arrest of secretion of all the buccal glands. The patient, as in the majority of these cases, was a woman. Treatment by tonics, jaborandi, and the faradic current gave no relief.

In the *Lancet*, April 23, 1898, another case is reported by Dr. Sharp, of Whitby, in which a single woman, aged forty-one, had suffered for eighteen months from constant dryness of the mouth. Here certain features, which were present in the previous case, were absent; there was no interference with the secretion of tears, no enlargement of the parotid glands, no depreciation of the sense of taste or smell, and little, if any, dryness of the nose. The patient reported that she was improving with medium doses of mercuric iodide and quassia.—*Edin. Med. Jour.*

Rhizomelic Spondylosis.—P. Marie (*Rev. de Med.*, April 10, 1898) describes under this title a morbid entity, of which he has himself seen three examples, and has collected three cases from literature. As the name implies, the disease consists of ankylosis of the spine and of the limbs where they join the trunk. The spine is ankylosed, and there are bony outgrowths from the vertebræ which can be felt on the bodies of the cervical vertebræ when the fingers are introduced into the pharynx. The spinal ankylosis is more marked in the lumbar region and less in the neck. The spine becomes fixed in flexion, and hence considerable kyphosis results. The hip is more affected than the shoulder and is the only one in which true ankylosis results. In the shoulder there is very considerable limitation of movement; the arms cannot be raised to a right angle with the trunk. Although the patients do not complain of loss of movement in the knees, they are affected. The ribs become fixed, and respiration becomes abdominal. The thorax and the pelvis become markrdly flattened. The nodes, described by Bouchard, occur on the fingers. eAll the cases have been in men, and the disease usually begins in early adult life. Rhizomelic spondylosis differs from severe cases of chronic

rheumatoid arthritis with ankylosis of the spine in not affecting the smaller joints. In hereditary traumatic kyphosis—a condition described by Marie and Aste—the kyphosis is curvilinear, and there is no affection of the joints. There is no evidence of any infection such as gonorrhœa. Marie has discovered a specimen in the Musee Dupuytren, which is probably an example of rhizomelic spondylosis. The spine is ankylosed, and shows bony growths and ossification of the supraspinous ligament, while the hip joints are affected. Bricon's case of multiple exostoses, hyperostoses, and synostoses of the spine in a cat probably belongs to the same category.—*Brit. Med. Jour.*

Treatment of "Black Eye"—Charles H. May (*Medical Record*, New York). The treatment of contusions of the lids depends upon whether the patient is seen early, when there is considerable swelling, or not until later, when the discoloration is the prominent feature. If he is seen early treatment consists of cold compresses or cooling or evaporating lotions. With these swelling and discoloration can be diminished, though not prevented entirely. If the patient is seen later hot compresses and massage are indicated to hasten the disappearance of the discoloration. Cold compresses are to be applied continuously at first, but not by means of an ice-bag or a piece of ice wrapped in a handkerchief and applied directly to the swollen lids, since these furnish too intense and too constant cold. Small compresses of lint or flannel, fourfold or sixfold measuring 1 and 1½ inch in diameter, are to be cooled upon a block of ice and then transferred to the lids. Several compresses of this sort are placed upon the ice and an exchange between the warm one on the lids, and a cool one from the ice is effected every minute or two. The cold compresses should not cover the nose, since acute coryza may be produced. They are to be applied during the first twenty-four hours, either continuously or every second or third hour for an hour at a time, depending upon the amount of redness and swelling. The sensations of the patient are usually a guide in determining the proper amount of cold; when the compresses are used too continuously they will become uncomfortable. Cooling and evaporating lotions are of service, though less potent than iced compresses. Both are to be applied cold, the compresses being wrung out and changed frequently. After twenty-four to forty-eight hours, when the swelling has subsided, the discoloration will show itself in a more pronounced manner; the lengthy duration of this stage can be cut short by hot applications and by massage. Flannel cloths are to be wrung out of hot water—as hot as can be borne—and allowed to lie upon the lids, being changed every minute or two; they are continued for an hour at a time, and applied three times a day, or oftener if it is especially desirable to hasten the return of the lids to a normal condition. When the skin is very sensitive, especially in women, a little white vaseline or any bland salve should be applied to the eye-lids previous to the use of hot compresses, to prevent soreness and irritation of the skin. Massage is a very satisfactory means of causing a rapid disappearance of the discoloration. The area involved is smeared with the ointment of the

yellow oxide of mercury or white vaseline, and then gentle massage is practised for five or ten minutes at a time, or longer, several times a day. If it is particularly desired to cause a very rapid disappearance of the blood stain, the hot compresses may be used continuously, and the massage for a number of hours. By these means the disfigurement may be almost, if not entirely removed within twenty-four hours, or even sooner, after the subsidence of the swelling.—*Brit. Med. Jour.*

Hysteria in a Male Simulating Chronic Ileus.—Strauss (*Berliner Klin. Wochenschrift*, Sept. 19, 1898) reports a case where a man, aged 29, after an accident in which one of the left ribs was broken, suffered from constipation. Ever since then he had suffered from chronic ileus with occasional attacks of apparently complete obstruction, with fœcal vomiting, etc. He had been in a number of hospitals, and laparotomy had been twice performed for obstruction, without, however, any abnormality being found. While in Senator's clinic he presented all the symptoms of chronic intestinal obstruction. At the same time he was evidently very neurotic; thus, there was anæsthesia of the left leg, the pharyngeal reflex was absent on the left side, and there were many other hysterical manifestations. This agreed with the histories taken in other hospitals, especially with the fact that after the two laparotomies he was cured for a time. It was difficult, however, to decide in what causal relation the various symptoms stood to the hysteria. Suddenly, after being treated for five months, the patient had a typical hysterical attack, when the enormous tympanites, which had persisted the whole five months with no evident improvement, disappeared, leaving the abdominal wall flaccid. Thirteen days later he left the hospital able to walk, and purgatives produced a daily evacuation, though previously they had had no effect. Strauss discusses the possible pathogenesis of the meteorism in detail, but leaves the question open.

Veal Pie Poisoning.—Paul Bowes, M.D.; Harold Ashton, L.R.C.P. & S (*Brit. Med. Jour.*, Nov. 5, p. 1456).—A confectioner made a batch of 160 veal pies, which were sold; 47 of those who ate them were made ill, and 4 died. The "incubation period" between eating the pies and the onset of the symptoms was fairly definite, from six to eight hours in most cases. The shortest "incubation period" was three hours, and the longest twenty-nine hours.

GASTRO-INTESTINAL SYMPTOMS.—In all cases diarrhœa was a prominent symptom; in some of the milder cases only a few very loose motions were passed; in the other extreme there was almost a constant evacuation of the bowels, from the onset to death or convalescence. There was considerable griping, but in only a few of the cases was the pain very severe. The fæces were, as a rule, watery. They were grass green at the commencement, but soon became very dark green. In some, blood was passed in small quantities. Vomiting occurred in all but two—at first yellowish green; afterwards, if persistent, merely the contents of the

stomach. Intense thirst was complained of. The tongue was dry, dark brown, thickly furred in the severe cases; furred but moist in the less severe. Herpes of the lips was fairly common, and in one or two a transient rash was present, with, in some cases, subsequent desquamation of the cuticle.

TEMPERATURE.—In all adult cases but one shivering was a most marked symptom, and whenever seen in the early stages the temperature was invariably raised. In some cases it bordered on hyperpyrexia; in most it ranged from 100° to 101°.

GENERAL SYMPTOMS.—Weakness of circulation was a most prominent feature. In the severe cases it was extreme, and lividity and coldness of extremities came on rapidly. In the mild cases, even for days afterwards, the patients felt tired and weary.

NERVOUS SYMPTOMS.—Severe cramp was rare; some complained of pains and stiffness in the calves of the legs, as if they had had cramp. Some had twitching pains in the legs. Headache was not usual. Drowsiness was very marked in at least two cases, but many were restless from exhaustion.

TREATMENT.—Practically resolved itself into the prevention of collapse. In the worst cases, medicines, effervescing or otherwise, were not retained. A mixture containing aq. sulph. dil, bismuth subnit., liq. morph. mur., and spir. chlorof. agreed well with the milder cases.

A necropsy in a fatal case showed patches of congestion of the mucous membrane of the small intestine, becoming more marked and frequent descending the intestines. The large intestine contained green fluid, and the lining membrane was throughout highly congested.

The pies were most virulent on the second and third days after cooking. Those which were eaten on the same day and the first day after cooking seem to have caused little or no ill-effects. No one complained of the taste or appearance of the pies, which had no smell whatever. The usual signs of a cold veal or pork pie being overkept are: 1. The jelly liquefies and the bottom of the pie becomes soft. 2. The meat becomes detached and loose in the paste. 3. A whitish mould appears on the meat, which may smell sour.

Fatal Wasp Sting.—F. H. Cooke, M.R.C.S., L.R.C.P. (*Brit. Med. Jour* Nov. 5, p. 1429). A strong, healthy girl, aged 24, was stung by a wasp in the hand. A few minutes afterwards her face was very red. She complained of feeling numb all over, and of losing her sight; she then fainted. (These symptoms of numbness and blindness had also occurred on a previous occasion when she was stung.) Her face turned suddenly pallid and she expired in about twenty-five minutes. Well-authenticated cases of death due to syncope from wasp sting, etc., are rare.

Pressure Pouch of the Œsophagus.—An excellent article by Mr. Butlin (*Brit. Med. Jour.*, Jan. 1, 1898) summarises our knowledge of this condition. He has seen six patients suffering from the symptoms of pres-

sure-pouch of the œsophagus, and thinks that the condition is not so rare as has been generally imagined. Certain it is that the symptoms of the pouch are not generally known, and that it has been mistaken for pouching of the œsophagus above a stricture, whether innocent or malignant.

True pressure-pouch of the œsophagus is practically always situated at the back of the junction of the pharynx with the œsophagus; it opens into the gullet by a longitudinal opening, about an inch in length; it is more frequent in males than in females, and is not generally noticed until after forty years of age. Return of fragments of undigested food is the one constant symptom in every case—not immediately after the food has been taken, but many hours, or even days, afterwards. Pressure on the side of the neck in the posterior triangle (usually on the left side) causes fragments and liquids to return into the mouth. A bougie is arrested at a distance of about nine inches from the teeth. If the bougie be made of metal and slightly curved, its end may be made to project, so that it can be felt and seen, in the side of the neck (almost always the left side) behind the sterno-mastoid muscle. The pouch can be removed by operation, and the patient is then not only relieved of distressing symptoms, but also of the fear of death from slow starvation. But the operation is not free from difficulty and risk. A successful case is recorded in the paper already mentioned, and Mr. Butlin had previously published another in the *Medico-Chi. Trans.*, vol. lxxvi.

A case of pressure-pouch is recorded by G. A. Wright and R. Smith in the *Brit. Med. Jour.* for April 9, 1898, but in this instance the food could be returned by pressure on the *right* side of the neck. By emptying this pouch after every meal the patient has remained comfortable, and has been able to dispense with an operation for the present.—*Practitioner.*

Spinal Meningitis Complicating Measles.—Starck (*Jahrb. f. Kinderheilk. u. Physéc Erziehung*, vol. xlvii.) reports the case of a girl, 8 years of age, who had a typical attack of measles. On the second day of the eruption she complained of great pain on movement. The nurse could not turn the patient on her side, because of the extreme tenderness. All movements of the legs and arms were followed by muscular spasms. The skin of the legs and arms was hyperæsthetic. The neck was stiff and the head slightly retracted. The temperature was 101° F. On the same evening there was retention of urine, which lasted several days. On the fifth day of the nervous symptoms the patient was able to pass urine, but with pain. On the seventh day the arms were free from pain; the legs were still attacked with painful spasms when touched. In a fortnight the child was able to walk a little; the legs were still stiff, but not painful. The knee-jerk was exaggerated. Micturition was painful, and the bowels only acted after purgatives. Ultimately the patient recovered. Measles seemed to be the only possible cause of this condition; all other diseases were carefully excluded, and the child's previous health had been excellent. The writer could not discover a similar case after an exhaustive search—*Brit. Med. Jour.*

The Value of Hydrochloric Acid in Sciatica, Etc.—We stated how the value of hydrochloric acid in sciatica had been discovered in our first number (p. 41.) The following confirmatory observations are of interest:—

R. A. Bayliss, M.R.C.S., L.R.C.P., writes (*Brit. Med. Jour.*, Nov. 19, p. 1550):—

Hydrochloric acid was applied over the course of the sciatic nerve or to the heels and feet, for the relief of pain in these parts in 26 cases; 16 had sciatica, which, in most instances, had defied every other treatment. Of these, 2 were completely cured, 11 were considerably relieved, and 3 were not improved. The remaining 10 patients were suffering from intractable pain in the heels and plantar region, the sequelæ of acute rheumatism, many gonorrhœal. Of these, 4 were quite cured, 1 was very mueh relieved, and 5 were not improved. The average number of applications was, for all the cases, 15. The duration of the treatment varied from one to five weeks. The strong acid of the *British Pharmacopœia* was painted on the skin at bedtime with a glass brush, in a series of lines about 2 or 3 inches long over the tender spots in the thigh and calf. When dry the limb was enveloped in cotton wool and loosely bandaged, and so left till the morning, when the patient was allowed to get up as usual. No vesication of the skin was produced, and the application was not attended with any pain. The acid may be applied every night or every other night, according to the effect produced on the skin, but it should be discontinued directly there is any sign of redness or irritation of the parts.

The Role of Secondary Infections in the Hæmorrhagic Forms of Eruptive Fevers.—Haushalter and Etienne (*Revue Mensuelle des maladies de l'Enfance*, June, 1898), have found that in variola hæmorrhagic complications appear to be due to a secondary infection of the streptococcus. This organism has been found in pure culture in the blood and viscera of a child dead of hæmorrhagic septicæmia appearing at the period of pustulation. But the most important argument is a distinct dissociation between variola and hæmorrhagic streptococcic septicæmia observed in a child affected with a discrete and very benign variola; during the convalescence fatal hæmorrhagic complications occurred as the result of the removal of the patient during the first period of the disease to a ward in which there were hæmorrhagic cases of the disease. Moreover, the hæmorrhagic form appeared to be independent of previous vaccinations.

A generalisation of these conclusions with reference to other infectious diseases was offered by a case showing a hæmorrhagic staphylococcic septicæmia during the desquamative stage of scarlatina.—*Amer. Jour. of Med. Sciences.*

Prolonged Diphtheria.—Golay (*Rev. Med. de la Suisse Rom.*) publishes a case of diphtheria which, as regards the persistent presence of

Lœffler's bacillus, lasted over 362 days. On March 11, 1896, the illness began; after an injection of antitoxin, the membrane had almost vanished on the 16th, and the child seemed quite well. Up till Aug. 6 virulent cultures of the bacillus were obtained (twenty-five examinations), at first pure, afterwards along with streptococci. From then till Sept. 2 cocci predominated, but a few short bacilli, proved experimentally to be diphtheritic, were present also. On Sept. 1 there was an acute relapse, with patches on the tonsils and B. diphtheriæ in pure culture. By Sept. 4, after an injection of serum (the third), the child was again cured clinically. On Sept. 10 no bacilli were found microscopically, and the cure was thought to be complete (just six months from the beginning), and no more cultures were made. However, on Oct. 22, there was another acute relapse, and the short bacillus was present with streptococci. By Oct. 28 nothing could be discovered under the microscope, and the patient, a boy aged 5½ years, was again looked upon as cured, and no further cultures were made till Feb. 5, 1897, when there was a third acute relapse when short bacilli and streptococci were found. These persisted after a fourth injection of serum till March 9. From then till Sept., 1897, the child kept well, but, as the parents would not consent to any more bacteriological examinations, it is doubtful if he was finally cured even then. Golay thinks there can be no doubt that bacilli were never really absent. He concludes from this and other cases that (1) a fortnight's isolation after the disappearance of the false membrane, as advised in standard works, is totally inadequate; not till three or four examinations at intervals of a week have proved the complete absence of bacilli can cure be considered permanent; (2) the presence of Lœffler's bacillus between the attacks of angina does not alter the general health; (3) the prolonged presence of diphtheria bacilli after the disappearance of membrane is the rule rather than the exception, but probably this period is not so prolonged when there is an associated streptococcus infection; (4) local treatment should be abandoned entirely, as its only use is to torture the patient. In the case given above a good number of local applications recently recommended (by Lœffler and others) were tried thoroughly without the slightest effect.—*St. Louis Med. Jour.*, Nov.

Pemphigus and Measles.—Leo (*Vereins-Beilagke der Deutschen Med. Wochenschrift*, Sept. 29, 1898) showed, before the *Niederrheinische Gesellschaft f. Natur. und Heilkunde*, three sisters, who, one after the other, were seized with pemphigus and measles. The pemphigus preceded the eruption of measles, which proved, in Leo's opinion, that the disease was not an abnormal form of measles (morbilli pemphigoidei), but a combination of the two infections.

Thrush of the Bladder—V. Frisch (*Wienklin. Woch.*, 1898, No. 39) records the case of an anæmic woman, aged 64, who had acute cystitis. She passed voluntarily 4 oz. of urine, and 12 oz. more were obtained by catheterisation, the last portions bubbling and containing a considerable

quantity of gas (pneumaturia). The urine showed a trace of albumen and 4 per cent. of sugar; it had a musty odor, and deposited a thick precipitate of white granular bodies, which were occasionally floated up to the surface by gas bubbles. Cystoscopic examination revealed more of these bodies attached to the wall of the bladder. Microscopically they consisted of a mycelium, which cultivation proved to be of the nature of thrush. The urine contained, also, yeast-cells, some bacteria, bladder-cells, and a very few pus corpuscles. Senator has published a case in which pneumaturia was produced by the alcoholic fermentation of diabetic urine, but in the present case the bulk of the gas resulted from the action of the bacterium coli. This has been previously recognized by Schnitzler. The bladder was washed out with a 1 in 1,000 solution of silver of nitrate, and the condition was practically cured in four weeks. Thrush of the bladder has not previously been described. Whence it came in this case could not be determined; the only plausible theory was that it had previously affected the vagina, whence it had disappeared.—*Brit. Med. Jour.*

Enteric Fever Running a Prolonged Course: Chills: Profuse Sweating: Angio-neurotic Œdema: Remarkable Elevations of Temperature without Complications.—C. F. Martin, B.A., M.D., and B. D. Gillies, M.D. (*Montreal Med. Jour.*, Oct., p. 743). A man, aged 30, entered hospital on the fifth day of the disease with the usual symptoms of typhoid fever, the pulse being 90 and the temperature 104°. Under baths, the temperature was readily reduced, rising, however, to a maximum of 102° or 103°, each day during the first ten days. Suddenly, on the 15th day, the temperature rose to 105°, and the patient had a severe rigor, followed by sweating. On the 23rd and 24th days the chills again recurred with profuse sweating. On the 26th and 27th days the temperature remained below 99·5°, and the patient was apparantly convalescing rapidly. On the following day again his temperature rose suddenly, and in forty-eight hours reached 104·3°. Rigors and sweating supervened, and he complained of severe pain in the right hypochondrium, for which no cause could be found. The temperature again subsided, but two days later very large swellings suddenly appeared over the left shoulder and left hip joint. These were red and tense, glistening and tender. They entirely subsided in two days. From that time on to the 32nd day the patient seemed to be gradually convalescing, and by the 51st day the evening temperature attained the normal. But the temperature again rose and reached 104·2°. The fever subsided as rapidly as it had appeared, and within a week was again normal. Once more, on the 64th day, the temperature rose from 98·2° to 105°; within a few hours rigors and sweating reappeared. In two days the temperature was normal, which it remained.

The case is particularly interesting, for it shows the uncommon complication of angio-neurotic œdema, and remarkable elevations of temperature due, not to any complication nor to typical relapse, but analogous to the temporary septic intoxications of the puerperal state. The fact that the pulse in the interval of these high temperatures remained slow and the general condition excellent, would seem to indicate that no serious complication had arisen.

Lupus Treated by Rontgen Rays.—Dr. J. Rudis-Jicisky (*Amer. X-Ray Jour.*, Oct., 1898), after treating a number of cases of lupus with Röntgen rays, in which very favorable results were obtained, has decided that the Röntgen rays constitute the best means for producing artificial inflammation, and converting unhealthy ulcerations into open healthy granulations. He reports the two following cases:—

First case was one of lupus erythematosus on the left leg, characterized by the appearance of pink patches covered with yellowish adherent scales. Having tested the tube with the screen, to see that it was in working order, and using an 8 in. coil, a series of short exposures were made. The healthy tissue was protected with stanoil, and the tube was placed at a distance of from 15 to 18 in. At first there were traces of brownish discoloration of the skin. After the first application the infiltration began to diminish. Later, general inflammatory action was established, and the unhealthy ulcerations assumed the appearance of healthy granulations. The patient was completely cured.

Second case.—Lupus vulgaris on the right side of the face, which began with the appearance of yellowish deep papules and gradually extended, forming irregular ulcerative patches. The Röntgen rays were used with marked beneficial effect.

Vicarious Urination?—Dr. Rice (*Canadian Lancet*, Oct., 1898) reports a curious case. The patient, aged 30, of a nervous temperament and rather weak intellect, three years ago had an attack of cystitis, with complete atony of the bladder, of three weeks' duration, necessitating the use of the catheter during that period. The attack gradually subsided, though considerable tenderness remained for some time. Twelve months after this attack, she suffered from involuntary twitchings, emanating from the dorsal region and extending over the whole body; there was considerable tenderness over the spine. These twitchings, or spasms, were so severe as to confine her to bed for several weeks. Accompanying this attack were discolorations of the right leg and thigh, extending almost entirely over the limb, but without tenderness. After a few weeks they gradually disappeared, and the patient regained her ordinary health. A year ago the atony of the bladder returned, and the patient was again obliged to resort to the use of the catheter three times a day, about half an ounce being drawn each time. The general health suffered, the bowels were constipated, appetite impaired, there were mucous patches in the mouth, and the breath was foul. Treatment failed to relieve these abnormal conditions; the twitchings returned and continued. The feet began to swell slightly, the secretion of the bladder gradually diminished, but was compensated for by an exudation of fluid from the anterior portions of the lower limbs between the knee and ankle. This fluid was voided regularly three times a day, the amount gradually increasing until it averaged from thirty to forty ounces per day. There was no abrasion or discoloration of the skin, and no œdema was present. The fluid simply oozed from the skin. The patient would realize that the flow was about to begin, and would place her feet upon a stool and a basin beneath her

heels. The fluid was of an amber color, similar to healthy urine, with a specific gravity of 1010. It had a strong smell of urine upon boiling, with a distinct ammoniacal smell after standing. Examination showed the presence of uric acid; albumen and sugar were absent. After this peculiar condition became established, the patient's health rapidly improved and became fairly good; so that she had little to complain of except the inconvenience caused by this peculiar phenomenon. This condition lasted about two months, when, after an unusually large quantity of fluid had been passed, it ceased altogether, and urine again began to pass through the uretha. The patient again became very ill, and spasms reappeared accompanied by headache, swelling of the feet, and great swelling of the face. These symptoms lasted about a week, then gradually disappeared, and the patient regained her usual health, which has continued until the present time. Dr. Rice vouches for the correct history of the case, and was present upon one occasion when the fluid was voided in the peculiar manner described. He naturally asks, Was this vicarious urination? If so, how is it to be explained? Through what channel did it travel? The fluid certainly stood the tests of urine, and its elimination enabled the patient to live.

Unilateral Excision of the Thyroid Gland in Graves' Disease.—Wolff (*Mittheilungen aus den Grenzgebieten der Medicin und Chir.*, Bd. III. Hft. 1) mentions the conflicting opinions which are held as to the value of unilateral excision of the thyroid gland for exophthalmic goître, and reports some cases of his own. In one of these the result was brilliant. The woman, who at the time of the operation was extremely emaciated, and had derived no benefit from any drugs, five and a half years later was in robust health, and had had two children, though exophthalmus was still present. His nine other cases show that a favorable result may be expected, even in the worst cases, which have derived no benefit from medicine, though it does not follow in all. Thus, out of his nine cases, six were benefited, one had a severe relapse, and two died.

Splenectomy in Malaria.—Laccetti (*Giorn. Internaz. delle Scienze Med.*, Fasc. 1, 1898) reports a case where he removed an enlarged malarial spleen. Six days later an intermittent fever appeared, which soon yielded to quinine injections. This was probably due to the sporulation of the malarial parasite, which, according to Pes, may remain latent in the blood for months. The patient experienced also violent pains in the long bones, which it is suggested were due to a vicarious action of the bone-marrow. Laccetti states that the simple congested spleens found in chronic malaria are reduced by quinine or vaso-constrictor drugs—such as arsenic, strychnine, ergotine—or electricity; when, however, there is a hypertrophic interstitial splenitis, splenctomy is indicated, especially if the enlarged spleen is painful.

Maragliano's Anti-Tubercle Serum.—Ulrich (*Therapeutische Monatshefte*, Oct., p. 547). Dr. Ulrich gives notes of 7 cases treated with Maragliano's serum, including 3 of tuberculosis of the lung alone, 2 in which both lungs and larynx were involved, one of Pott's disease with psoas-abscesses, and one of advanced tuberculosis of lungs, testicle, and ethmoid bone, with probable lardaceous disease. No very definite decision can be arrived at from the results recorded. The most marked influence of the remedy appeared to be exercised on the temperature, which became normal during the administration of the serum. In one case in which injections were practised on alternate days the temperature remained normal on the days on which the remedy was applied, but rose on the intermediate days. In only one case did tubercle bacilli cease to appear in the sputum: in another they were expectorated in clumps, as if the serum had had the effect of "agglutinating" them. No change was observed in the laryngeal affection in either case, but the patients in nearly all cases professed to feel some subjective improvement. In one instance an urticarial rash followed the injection, as is known to occur also after injection of anti-diphtheritic serum.

Lett's Solution Albuminate of Iron is one of the best restoratives after an attack of la grippe, in which case it should be given in tablespoonful doses three times a day.

For the bronchial coughs and debility following la grippe, *Ferrol* fills the bill most completely, getting both the action of the Iron and Cod Liver Oil. Physicians using it speak in the highest terms of its action.

The Alaska Feather & Down Co. have just sent us their new catalogue of beds and iron and brass beds. Their patent Elastic Felt Mattress is in use in many of the best hospitals in America. From the many testimonials presented, they must fill the bill to the fullest extent and much cheaper than hair. Write for catalogue, if you have not received one.

To DISINFECT THE SKIN before inserting the needle and for cleansing the operator's hands—

℞ Lysol 2
Water 100

LUPUS—

℞ Sod. sulphoichthyolat 2
Aquæ 100
M. S. Inject 1 c.c. —UNNA

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CONGENITAL DISLOCATION OF THE HIP.

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Congenital dislocation of the hip is a displacement of the femur in its relation to the acetabulum, existent at the time of birth. The former is commonly found lying behind the acetabulum, but several cases have been reported where the displacement was forward and upward.

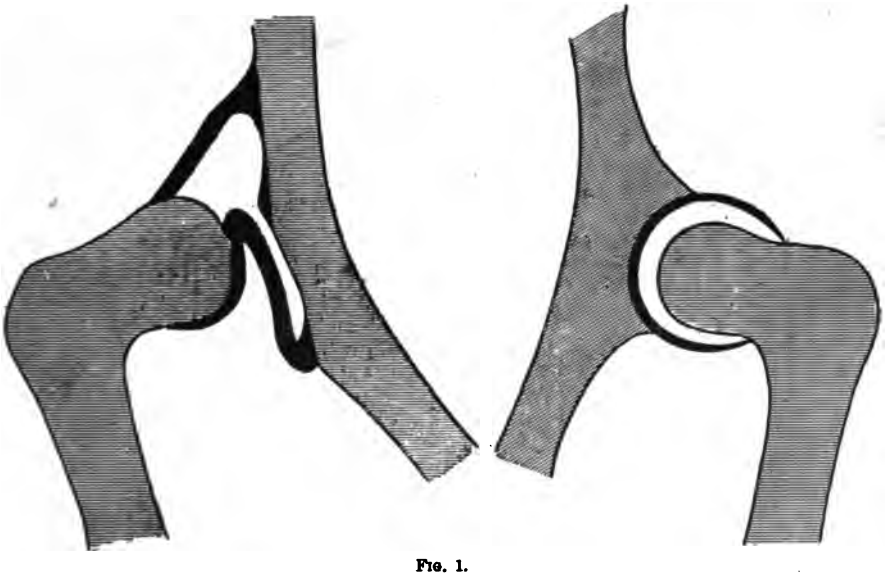

FIG. 1.

Shows the shallow acetabulum and the capsule drawn across it, and carried upward on the side of the ilium. (Copied from E. H. Bradford, Trans. Congress Amer. P. and S., 1897.)

Of all congenital dislocations that of the hip is the most frequent. Of the various cases of deformity presenting themselves, probably not more than one per cent is thus affected.

While it is a comparatively rare affection, yet it is not so uncommon as many suppose. Cases that I have seen had generally passed unrecognized, previously. Some had been treated as hip disease, one, because of the lordosis, had been wearing plaster jackets, and still others had an unrecognized cause of lameness.

Without, at this time, touching fully upon the pathological anatomy of this affection, it may be stated that there are many causes which produce this condition. Different observers have laid stress upon different sets of phenomena to explain the clinical and anatomical conditions found present.

It is generally conceded that true congenital dislocation is an affection of uterine life. It is not a defect of development like hare-lip, but a malposition of bones with resulting structural changes in the soft parts, as in club foot. The affection, for some unknown reason, is more common in girls than in boys.

In the Transactions of the British Orthopedic Society, for 1896, is published, by Mr. Jackson Clark, the report of an infant specimen tending to show that intra-uterine pressure is an important cause, the thighs having been flexed for so long a period, without extension, as to cause contraction of the anterior portion of the capsule, which in extension would act as a fulcrum and result in throwing the imperfectly formed head out of the acetabulum.

My own observation is strongly confirmatory of that of some others, pointing to the probability that there is some general cause at work, at least in many cases, producing defects in the skeleton. Taylor reports the examination of an adult pelvis showing double congenital dislocation and imperfect development of the whole pelvis. There was marked shallowness and irregularity of the acetabulum, flattening of the femoral heads, while the whole pelvis was very light, and in some parts of egg-shell thinness, and the vertebral arches of the sacrum were incomplete. This writer calls attention to an article by Wolff, who describes the case of a nine year old girl with bilateral congenital hip luxation, and presenting other features of special interest. There was a fixed dislocation of the left tibia forward, a similar dislocation of the right knee, which could be replaced by the patient at will, and marked laxity of nearly all the joints of the body, in several of which luxations or subluxations existed.

In my own observation, one girl of eleven years, seen with Dr. G. A. MacCallum, of Dunnville, had, at birth, strongly marked genu retrorsum, with absence of the patella on the same side. As the backward displacement of the knee had been corrected, and she still walked with a slightly marked limp, further explanation was sought and found in the fact that there was a congenital luxation of the hip of the same side. Another case was that of a child in whom both tabiæ were congenitally absent. This boy had congenital luxation of one side, one testicle only found in the scrotum, and hare-lip with cleft palate.

There seems no good reason for trying to assign all cases to one general cause. It is certain that we must look upon these cases as dependent upon many various causes, imperfect development, intra-uterine pressure, laxity of ligaments, and traumatism before or at the time of birth.

The pathological anatomy is well known. The most important changes are those of the capsule, which is not ruptured as in ordinary traumatic dislocation, but is gradually stretched. As the child's weight increases

the upward ascent of the head is increased and the capsule is of necessity dragged with it. The shape of the capsule is changed from that of an irregular globe passing from the rim of the acetabulum to its attachment to the neck of the femur, becoming like an empty purse-bag glued to the iliac bone, the lower portion covering the acetabulum, the free portion enclosing the femorae head while there is a constricted portion or neck lying between.

This capsule stretched across the acetabulum and adherent to it becomes one of the chief obstacles in the way of successful reduction.

When the upper end of the femur has thus been allowed to lie upon the dorsum ilii for several years the soft structures become greatly shortened, and thus another obstacle is found to be in the way of satisfac-

tory rectification of the displacement. The pelvi-femoral muscles, especially the adductors are much shortened; so also are the pelvi-crural muscles.

These changes in the soft parts constitute the chief obstacles in the way of successful reduction.

When once a case of this kind has been carefully observed diagnosis, afterward, is comparatively easy in all such cases. In the adult and in larger children the attitude and gait are characteristic. In walking, if the luxation exists on both sides, the patient waddles like a duck; if on one side only, then at each step the body lurches to that side and is lowered as the end of the femur glides upward in its relation to the pelvis. There is marked lordosis if the luxation be double and on the dorsum ilii: if single there is less lordosis but the end of femur may be found as it projects into the soft tissues over the external iliac fossa.

Evidence well nigh conclusive is obtained when the patient lies upon the back, and the affected limb is carefully pulled downward and then shoved up again while the hand or the eye traces the gliding movement of the femur on the pelvis. In this manner the femur can be pulled down or shoved up again through a space of from one to two inches. In very many cases the head of the femur may be distinctly felt by digital examination.

The condition is seldom recognized till efforts to walk are made. The late walking and the insecure and unusual gait calls attention to some abnormality which may now be easily recognized. Seeing that so much attention has been given to this subject in the last decade, cases are likly to be recognized hereafter at a much earlier time.

The affections with which it is most likely to be confounded are, coxa vara, distortion following infantile paralysis, separation of the epiphysis, deformity following arthrthritis of infancy, traumatic dislocations, and disablement following hip disease.

In coxa vara (neck of femur bent downward) there is not the characteristic gliding motion of femur on the pelvis, and there are likely to be other evidences of the previous existence of rickets. The head of the femur is not out of the acetabulum. There will be less atrophy of the limb.

In cases afflicted with lameness from infantile paralysis, the femoral head will be found in the acetabulum, and generally some groups of muscles may be easily recognized as presenting disablement from paresis.

An early separation and absorption of the epiphysis, either through traumatism or arthritis of infancy, cannot be distinguished from congenital dislocation except through attention to the history.

In this connection the following cases are instructive:

CASE 1.—Jan. 15, 1891. C. C. male, 4 years. Had scarlet fever in the spring of 1890, had always been a healthy boy previously, active and perfectly formed. Made a tedious recovery, having had several abscesses, one in front of the ear, one over the larnyx, and one over the trochanter of the left side. Did not commence to walk again till the autumn. The gait acquired at this time is described by the father as "waddling." As he stood and as he walked about, his appearance and movement were typical as pointing to double congenital dislocation-marked lordosis, bulging of the end of the femur under the glutei, the gliding movement easily evident to the eye or the hand. Diagnosis, separation and absorption of upper femoral epiphyses.

Taking into account the history and the present condition diagnosis, seemed to me very plain. As the father was greatly disappointed, discouraged and dissatisfied with my diagnosis and prognosis, I referred the case to another surgeon, who agreed as to the condition present, but thought it uncertain whether the case was one of congenital dislocation or one due to an arthritis with destruction of the upper epiphyses. In the future dealing with this case he admitted the correctness of my diagnosis.

CASE 2.—Nov. 18, 1893. W. F., 11 months, male. When two months old had much tenderness about the right hip, with swelling and fixation of the joint. This condition continued for two months, but at no time was there any discharge. Now the child seems healthy and strong. There is no difference in the length of the legs, no atrophy, no limitation of motion at the joint, no riding upward of the femur. Will not use the leg in standing, showing no disposition to bear any weight on this limb, but uses it freely, kicking it about when lying down. There seems a little flattening of the right natis. No definite diagnosis made.

Feb. 11, 1897. Walks with a limp characteristic of congenital dislocation of right hip. Femur glides freely on the side of the pelvis. Length of right leg from the anterior superior spine, 18 inches; of left leg, 19¼. On right side the tip of the great trochanter was on the same level as the anterior superior spine. Right thigh is slightly atrophied.

Diagnosis in this case is clearly a gliding femur upon the pelvis resulting from an acute epiphysitis when the child was two months old. When examined at eleven months old the femur still retained its normal position in its relation to the plevis, but as soon as the child began to place the body weight on that limb the displacement of the femur occurred, as the femoral head had disappeared, because of arthritis.

This child passed into the hands of another surgeon who had not had the advantage of seeing it at an earlier time, and who considered the case one of congenital dislocation.

Traumatic dislocations have been considered very rare in children. It is quite certain, however, that they do occur. The history should afford help. Mobility in this case is sure to be much less than in congenital dislocation.

If attention be given to the history, this affection should not be confounded with hip disease, nor with its results; yet, this has often been done. It is only in the very late stage of hip disease when the femoral head has been absorbed or removed, that gliding of the femur upon the pelvis can be observed.

The amount of resulting disability varies greatly in different subjects. As a rule, children are not much inconvenienced thereby. The limp is, of course, always strongly marked. The child generally tires easily, and long walks or violence applied through accident, sometimes causes pain. Persons of great weight, and those of weak muscles suffer most.

Treatment by purely mechanical means may be dismissed with a very few words. Though many attempts have been made, it may safely be said that none have succeeded.

Hoffa, of Würtzburg and Lorenz, of Vienna, are justly entitled to more credit than any other surgeons for placing the treatment of this affection upon a scientific and successful basis. Operative measures were resorted to at an earlier date by Poggi and Marjory, and by Paci at a later date; but the many cases treated by Hoffa and Lorenz, and by Delanglade, in France, enabled them to elucidate the obscurity of the pathological anatomy, thus laying the only secure foundation upon which to erect surgical success.

The first successful cases were reduced after incision, the cutting of shortened muscles, the opening of the capsule and deepening of the acetabulum. At this time many fatalities resulted, and there was not a little prejudice against operative interference; but increased knowledge of technique brought about, not only better results, but safety also.

In cases treated by operation, the incision is made to extend from the anterior superior spine downward and backward, crossing just below the tip of the trochanter, running along the outer border of tensor fasciæ femoris downward to the level of the trochanter minor. Muscles are retracted, and fascia incised till the capsule is reached. The capsular ligament is now freely incised and the femoral head and trochanteric line freely exposed. If now the attachment of the ligaments to the femur be completely severed, the head may be pulled outward and the acetabulum, covered by the capsule stretched across it, may be deepened with the curette. After the acetabulum has been prepared for its reception, the head is brought into position. It is important to see that the soft structures are sufficiently divided to enable the head to stay easily in the cup prepared for it, and that the latter is deep enough to present a good rim which may serve to retain the replaced head in position.

In dressing, the utmost care is required; and, in fact, throughout the whole procedure, the aseptic precautions must be most rigid. As the wound is a deep one, and may easily be shut in in its deeper parts by muscular contraction or the closure of layers of fascia, drainage is important.

The limb should be placed in a flexed and abducted position, and thus retained by a gypsum dressing extending from the axillæ to the feet.

It is now certain that these cases can be cured by an operation such as that just described. In a case reported by Delanglade, a child of three years died from measles six months after operation, and the femoral head was found resting securely in the socket. Hoffa and Lorenz especially have reported excellent results with but little shortening, good motion, and slight lameness. When suppuration results, as it has in a good many cases, there is sometimes ankylosis or limited motion. This condition, however, still represents a great gain, as a gliding femur rest-

ing upon the side of the pelvis is one of the most serious disabilities; and secure anchorage, though with ankylosis and some shortening is a great gain.

In younger children, say under seven years, incision is now seldom found necessary. The experience gained in reducing the dislocation where incision was made has so familiarized the surgeon with the pathological conditions present that successful reposition can be secured in young children by a bloodless method.

Strong traction on the affected limb must be made so as to stretch the soft structures and produce abduction. The anatomical conditions present are quite different from those found in ordinary dislocations. It has been pointed out, and is shown in fig. 1, how the capsule is stretched across the acetabulum preventing the femoral head from entering. In order to stretch this portion sufficiently, it is necessary to employ abduction, extension, circumduction and traction with great force, so that the

narrow portion of the constricted purse-like capsule may permit the passage of the femoral head. Unless the attached and narrowed portion of the capsule can be so stretched as to permit the passage of the head the operation must be unsuccessful, and incision becomes a necessity.

Even when successful reduction has been effected, the tendency to slip out again is very great, and the limb must be retained in a strongly abducted position, and the patient allowed to walk about so as to cause pressure upward and inward, thus securing not only the retention of the head, but also deepening the acetabulum, and thus preparing the way for the secure retention of the femoral head when the limb has been restored to its ordinary position.

Briefly to epitomize the present status of surgical knowledge and practice upon this important subject:

1. The dislocation exists at the time of birth.
2. The proportion of cases to the whole number of children born is very small.
3. It usually passes unrecognized till the time when the child is learning to walk.
4. The anatomico-pathological conditions are quite different from those present in ordinary dislocations.
5. The insecure relation of the femur to the pelvis causes very marked disability and limp.
6. In children under six or seven years, bloodless and successful reduction can be effected producing ideal results.
7. In the case of older children, and if the more conservative method fail, in younger children reduction and cure can be effected by incision.

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Removal of Biliary Calculi from the Common Duct by the Duodenal Route.—McBurney *(Annals of Surg.*, October, p. 481) has performed this operation successfully six times. When a calculus is situated at the extreme lower end of the passage, and when it cannot be dislodged to a place higher up in the duct, its removal without opening the intestine is a matter of great difficulty and not a little danger. Removal by the duodenal route is indicated; the only objection is that the intestine is necessarily incised. But suture of duodenum is much easier than suture of the common duct, and if properly done will heal rapidly. The writer believes that the operation has a much wider application; he would prefer it for the removal of a calculus situated at almost any point in the common duct. He has found the orifice of the duct very easily dilatable, and it may be freely incised for at least half an inch with safety. The operation is quicker, cleaner and safer than the usual one. It has also the advantage that, by the introduction of a probe, the bile duct can be examined for a long distance upward towards the liver, and also when the orifice of the duct is dilated to a large extent there is far less likelihood that overlooked fragments of gall-stone, granular material, or thick bile will be retained and cause further obstruction.

PROGRESS OF GYNAECOLOGY.

BY A. LANTHORN SMITH, B.A., M.D., M.K.C.S., ENGLAND,

Fellow of the American and British Gynaecological Societies, Professor of Clinical Gynaecology in Bishop's University, Gynaecologist to the Montreal Dispensary, Surgeon in Chief of the Samaritan Hospital for Women, Surgeon to the Western General Hospital.

GYNAECOLOGY AT THE EDINBURGH MEETING OF THE BRITISH MEDICAL ASSOCIATION.—On the way to the meeting I had the pleasure of hearing an address by Martin, of Berlin on the Progress of Ovarotomy in the last twenty years. It was a remarkable paper by a remarkable man. He has adopted the vaginal route to a great extent, and he closed his papers by giving the results of 131 vaginal laparotomies for diseased ovaries and tubes and for retrvoersion, ovarian cysts and small fibroids, etc. Out of these 131 cases he lost two. Since my return from Berlin I have performed a number of these operations at the Samaritan, Western, and at my private hospital with most gratifying results. These will be reported in full later on but in the mean time it is of interest to note that all the patients operated by the vaginal route made a much quicker recovery than those by the abdomen. Although they included pus tubes, tubal pregnancies, retroversion with fixation cystic ovaries, and closed tubes which were opened, yet not one of the patients died. Another striking advantage was the absence of the abdomenal scar and the pain from the incision, which these patients generally suffer from very acutely was absent. In fact most of these patients did not require any anodyne whatever. During the discussion at the recent meeting of the British Gynaecological Society, a gentleman reported a number of cases by the vagina with bad results and the other speakers all pointed out with great stress that the vaginal route is not suitable for large tumors of any kind whether fibroids or collections of pus, because it is almost impossible to deal with the adhesions which are so often present in these cases. In properly selected cases I feel sure that the vaginal route has immense advantages over the abdominal one.

One of the most interesting figures at the meeting was Doyen, of Paris, who showed two new instruments; one for automatically holding open the abdomenal incision, and the other, his instrument for arresting hemorrhage without ligatures by means of an enormously powerful crushing machine. The broad ligaments with the ovarian artery is seized and compressed for a minute with such force that it is completely crushed and when it is taken off no blood flows. I was told in Paris that it was not to be depended upon as several times secondary hemorrage had followed. I would prefer to trust Dr. Skenes electric clamp which dessciates the artery. One of the most interesting features of the meeting was a cinematographic representation of an abdomenal hysterectomy given by Doyen in one of the large halls of the University, at which there were six hundred doctors present. He is a very rapid operator and has devised a new method which only requires four minutes from the first incision until the whole uterus including the cervix is in the dish. The salient features of his method is to put a clamp on the two ovarians and then to catch the cervix through an opening in the vagina in Douglas cul de sac and draw it up forcibly, tearing it away

from its connections laterally and to the bladder in front. The uterine arteries are thus distinctly brought into view and clamped. His only takes two or three minutes for removing the uterus and some eight or ten minutes more are used in tieing the arteries and closing the opening in the pelvic peritoneum. I had the pleasure of being one of the eight or ten who saw Doyen do two total abdominal hystorectomies for fibroid in Prof. Simpson's service at the Royal Infirmary and he did one of them quite as quickly as the six hundred saw him do it by the cinemetograph.

Another interesting figure was Morrisanne of Naples, a gentleman very short in stature, about three feet six, but a giant in intellect, who gave an address on Symphiseotomy in French, who was followed by Dr. John Moir of Edinburgh, ninety-five years of age, who told of the improvements in obstetric and gynaecology in his life time.

The hottest discussion of the meeting was on Dr. Milne Murray's paper on the use and abuse of the forceps, and incidentally Dr. Japp Sinclair's excellent paper read at Montreal last year condemning the too frequent and too early use of the forceps came in for a great deal of abuse.

Dr. Sinclair stated that the forcep was responsible for a great deal of injury to women who were confined in the neighborhood of Manchester. It was evident that the majority of those present at the meeting were general practitioners who used the forceps to save time and did not want to be reproached for causing puerperal lesions.

There were several interesting papers on the proper time for removing pus tubes, and the general feeling was that it was safer to operate during the interval than during the attack as is also the case in appendicities. There was also a very warm discussion on the relative advantages of the abdominal and vaginal route for removing pus tubes, and the general feeling was that it was easier and safer to remove them by the abdomen. As disease of the vermiform appendix frequently complicates pus tubes, it was pointed out that the possibility of having to remove it in any case was a sufficient reason of itself to induce us to operate by the abdomen. Dr. Macan of Dublin, laid great stress on the importance of making a careful bimaninal examination under narcosis before deciding upon the vaginal route. Landan of Berlin, was strongly in favor of the vaginal route even for bad pus cases, and he has the courage of his convictions for I saw him removing the uterus and both tubes and ovaries by the vagina in a very bad case while I was in Berlin. One thing was very evident on this occasion, that while it is difficult to remove large pus tubes even after the splitting of the uterus in two and consequently sacrificing it, it is well nigh impossible to remove them through an opening in either the anterior or posterior vaginal vault without removing the uterus. Some years ago I attempted to do this and was compelled to abandon it by the vagina and to complete the operation by the abdomen. This combined operation by the vaginal and abdomenal route was the subject of a long discussion at the December meeting of the British Gynaecological Society. Dr. Arthur Giles summoned up the general opinion very concisely by saying that the raison d'etre of the vaginal operation was to obviate the necessity of opening the abdomen, and that there was nothing that was done by the combined

method that could not be done by the abdominal alone; consequently it seemed to him that to open the abdomen after beginning an operation through the the vagina was practically a confession of failure, it meant that the operator had found himself unable to carry out his original intention.

It was not his experience that abdominal operations for pyosalphix had a specially high mortality, for it happened that a rather large proportion of his cases of abdominal section had been for pyosalphix and so far there had been no death among them. I might add that my own experience agrees with Dr. Giles, as I have often been agreeably surprised to see patients recover from the most serious operations for pus tubes when neither the assistant or myself has thought it hardly possible.

Conservatism in Gynaecology has been receiving a good deal of attention during the last few months. Up to within a year or two ago it was the custom to remove both tubes and ovaries whenever one tube was diseased, even though the other tube and both ovaries were apparently healthy. When this was done in young women the artificial menopause brought on so suddenly was accompanied with great inconveniences, so much so that many of these young women declared that they regretted having had the operation performed. This led to remove only the tube and the ovary on the affected side and although we occassional were reproached for not making a complete cure by removing both, mostly in cases of sclerotie ovaries, yet these cases were much fewer than those who complained of the miseries of the premature menopause. More attention was then directed to the matter and now we frequently leave both ovaries in even where we have to remove both tubes for suppuration. Nearly a year ago such a case came under my care; a young lady who was infected by her fiancee with gnorhoea leading to two very large pus tubes. He so regretted his crime that he was anxious to make amends by marrying her and she begged that I might leave her ovaries. The pus tubes were therefore removed without tying the ovarian artery or otherwise hurting the ovaries except that the adhesions were stripped off them and they were carefully cleaned. This patient made a splendid recovery and is now very happily married. She menstruates regularly and normally and has all her womanly feelings and attributes. As I used catgut to tie off the tubes at the corner I would not be surprised to learn that she had become pregnant. In many other cases I have removed three-quarters of one or both ovaries and and a part of one tube with very satisfactory results. As many of these were done during the last few months it is too soon to expect them to become pregnant, but there is no reason why this should not occur. Since beginning this article I have operated on a lady for retroversion with fixation who was most anxious to have children. I found both tubes closed and imbedded in adhesions, the result of a severe attack of pelvic peritonitis from which she nearly died eight years ago. Both ovaries and tubes were torn almost to shreds by the enudations and nearly an hour was spent in patching them up with fine silk; but finally a good tube was left through which a prob could be pressed into the uterus. She is making a remarkably pleasant recovery from the operation and I have yet hopes of her becoming pregnant.—250 Bishop Street, Montreal.

THE MODERN TREATMENT OF UTERINE FIBROIDS.

BY W. A. NEWMAN DORLAND, A.M., M.D., PHILADELPHIA.

Perhaps there is no question more interesting, and certainly none more practical, than the treatment of fibroid tumor of the uterus. It is plain to be seen that no hard and fast rule can be laid down whereby each and every case as it presents itself can be acceptably disposed of. In the first place, such a course would assume the aspects of a dogmatic empiricism, and would place at a discount diagnostic distinction. There is as great diversity in the nature and complications of fibroid tumors as there are variations in the personal characteristics of the patients bearing them, and the truly scientific and successful abdominal surgeon is he who studies his case before stating the proper course of treatment to be pursued. There is now sweeping over the country, and, in fact, over the entire surgical world, a strong reaction against the indiscriminate employment of the knife that has been so popular during the last decade and a half, and this conservatism is as noticeable in the treatment of uterine fibromata as in the so-called conservative treatment of the uterine appendages. It must be remembered, however, that the pendulum has frequently swung as far to one extreme as it previously had done in the opposite direction, and that there is a radicalism that is more conservative than the strongest conservatism.

This brings us, therefore, by natural sequence to my next aphorism, namely, that an ability to accurately diagnosticate a given case is vastly more important than a knowledge of the use of the various surgical implements at our command. It was a dictum of my lamented teacher, the late D. Hayes Agnew, that a good physician may make a good surgeon, but a good surgeon must be a good physician. By analogy I may remark that a good diagnostician may develop into a good operator, but a good operator must be a good diagnostician. Acknowledging, therefore, the importance of being able to recognize at a glance the clinical features of a given tumor whereby we may determine what would be the most suitable plan of treatment to adopt in that case, it behooves us to group, as far as is practicable, the various forms of the tumor and their respective indications for treatment.

As we glance over the entire field of treatment, we find the subject naturally arranging itself into three distinct groups, as follows: (1) The medicinal treatment; (2) The use of electricity; (3) Operative procedures, which may be conservative or radical.

THE MEDICINAL TREATMENT OF UTERINE FIBROIDS. Until recently all gynecologists have regarded the administration of drugs to arrest the growth of a fibroid tumor as useless in most instances, and worse than useless—dangerous in many cases. It is claimed that by resorting to such a course of treatment often valuable time is lost, because of the progressive decline in the patient's strength, due to the repeated hemorrhages, and the general wear and tear upon the system attendant upon the presence of the tumor. In addition, the friction produced

between the tumor, when it has gained an appreciable size, and the surrounding viscera results in the formation of strong adhesions whereby subsequent surgical procedures will be rendered materially more difficult or even impossible without grave injury to vital structures. This course of argument is largely based on sound principles, and it should be stated at once that probably the vast majority of cases of fibroid tumor will be best treated by early resort to some form of operation. It is recognized, however, by even the most radical of the gynecologists, that circumstances arise when operation should be longer postponed, and a palliative treatment instituted. Such circumstances are the early approach of the menopause, when the tumor is not of excessive size, and has not been productive of urgent symptoms, or when such symptoms are manifestly diminishing in severity with the progressive oncoming of the climacteric; the absolute refusal of the patient to submit to operative interference; and the association of some depressing general disease, as pulmonary tuberculosis, renal inadequacy, or a grave cardiac lesion, whereby any operative procedure would be contraindicated.

Recognizing this truth, we as progressive men, whose main duty it is to consult the health and well-being of our patients, must now add some other indications to those already mentioned. It is at this point that our therapeusis may be radically influenced by the pathology and etiology of the disease. Two very suggestive papers have been published during the past three years, which have been somewhat obscured by the immense amount of literature which is daily appearing in support of surgical removal of the growths. While these papers, as I have said, are strongly suggestive, they have not as yet been fully substantiated by clinical proof and, therefore, cannot be brought forward as authorative in their statements. They do, however, open up new avenues of treatment in those cases in which for obvious reasons more radical measures cannot be adopted. The first of these by Byford,* of Chicago, suggests the microbic origin of fibroid tumors, and recommends a course of treatment tending to the destruction of these irritating agents. He claims that were Cohnheim's theory of neoplastic formation true, fibroid tumors of the cardiac muscle should be exceedingly common, while in point of fact they are exceedingly rare. On the contrary, the uterine muscle, which is not subjected to such constant strain as is the heart-muscle, but is essentially exposed to invasion by bacteria of all kinds, is a very common seat of these new-formations. Arguing from such a basis Byford suggests the following anti-microbic treatment: Curettement, to remove the germs; the application of electricity to still further destroy bacterial action; and the administration of ergot to diminish the vascularity of the parts, and thereby produce an environment less conductive to germ-growth.

The other theory of the formation of the tumors is advanced by A. Aubeau, and is also irritative in nature; it ascribes the growth to an old specific (syphilitic) infection, which, originating in a placental inflammation, gives rise to a tumor-formation upon the placental graft; this

*North American Practitioner, March, 1898

spreading outward through the uterine wall may attain the size of a walnut, or even a mandarin orange, and materially alter the size and shape of the uterine body. This tumor, Aubeau states, passes through three successive phases: "First, a phase of induration (hardened gumma), corresponding clinically to pure metrorrhagias; second, a phase of softening (melting of the gumma), corresponding to a gummous hydrorrheic flow, alternating with metrorrhagias; third, a period of fibrous or sclerotic organization (fibromyoma), whose symptons are the same as in fibrous tumors." The tumor is, then, at first inflammatory in nature, then fibromyomatous, and then sclerotic (fibroma). It necessarily follows, that with such an origin, an antisyphilitic treatment should be adopted and persisted in for some time. Under such a course of treatment Aubeau claims to have seen tumors of large dimensions melt away gradually before his eyes.

There is still another medical course of treatment which demands most careful consideration on our part. I refer to the influence of organotherapy on uterine fibroids. Jouin, first called attention to the close relationship existing between the thyroid gland and the pelvic organs. In addition to the influence exerted by the uterus, especially at the time of the menopause, upon the size of goiters, he was the first to observe a diminution in the size of a fibroid tumor under the administration of thyroid extract given to reduce obesity. Since then numerous clinicians have substantiated his observation in many instances, and thyroid extract, or thyroidin, is now beginning to hold a prominent position in the therapeusis of uterine fibroids as well as of other pathologic conditions.

In addition to the foregoing triad of medicinal courses in the treatment of fibroid tumor there are other remedies which may be used merely as palliatives. The old theory of the value of ammonium chlorid, as taught by Goodell and the older school of gynecologists, does not receive much endorsement by the younger men of to-day. Ergot in small and repeated doses, ammonium or potassium bromide, the frequent use of salines, the fluid extract of hydrastis canadensis, and the judicious employment of iron and other tonics and hematinics may have a gratifying effect in diminishing the amount of hemorrhage and leucorrhœa. These should be supported by absolute rest, if possible, and the administration of the best nutritious food, in order to atone for the tremendous drain upon the system.

2. THE ELECTRICAL TREATMENT OF FIBROID TUMOR.—The use of electricity in the management of fibroid tumors, I am fully convinced, should be relegated to the limbo of the medical past. I have personally seen a tumor of moderate dimensions, and one that could have been readily, and I believe safely, removed by the surgeon transformed into a suppurating mass of corruption as a result of a few weeks' electrical puncturation, with sinuous tracts communicating with the vagina and rectum. It is surprising, when the corollary is noted, and we find the patient succumbing from septic poisoning, subsequent to the surgical

operation that was performed under protest by the consultant as a *dernier ressort*? In the treatment of uterine fibroids, at least, electricity has been weighed in the balance and found wanting.

3. OPERATIVE MEASURES.—It is undoubtedly true, that sooner or later the vast majority of these patients pass under the hand of the operator. Too often, I fear, is he insufficiently skilled in his art, and hence the unnecessary high death-rate in the statistics of many surgeons. not only are such operators wronging their patients and the public, but they are bringing down unmerited reproach upon the profession at large and the form of operation in particular. A thorough and comprehensive course of instruction in every surgical detail should precede any attempt at operation. A few years since a physician in attendance at a post-graduate course in this city, remarked to me, that he had now seen twelve abdominal sections, and upon his return to his home in the East, he intended to perform the operation upon two of his patients, who were suffering from pelvic disease. I replied, that before I performed my first section, I had assisted in over 200 similar operations. I cannot emphasize too strongly my original assertion, that the ability to diagnosticate truthfully is far more valuable and commendable than is the ability to wield skilfully the scalpel.

A momentous sign of the times is the reactionary wave of conservatism in all surgical procedures, and especially is this to be noted in the surgery of the pelvis. It is now recognized as obligatory upon the surgeon to the public at large. Where formerly abdominal hysterectomy alone would have been thought of, to-day myomectomy or the ligation of the blood-supply will be performed in suitable cases. It is not my intention, nor would I have time or space, to enter into a full detail of the history, growth and technic of these various surgical performances. All that I can attempt will be a mere outlining of the indications and scope of each. Glancing, then, at the conservative measures that are now being largely adopted in the treatment of operable fibroid tumors, the following scheme presents itself: 1. Curettement; 2. Myomectomy, original or abdominal; 3. Morcellation and avulsion; 4. The ligation of the blood-supply. The radical procedures that become obligatory in a certain percentage of cases are: 1. Castration; 2. Supravaginal hysterectomy: 3. Total extirpation.

CURETTEMENT.—The pronounced histologic changes that occur in the uterine mucosa, as a result of the presence of a fibroma in the wall of the womb, result in the development, sooner or later, of a very intractable form of endometritis most commonly of a hemorrhagic nature. The pathology here consists in a vast overgrowth of the interstitial connective tissue with resultant occlusion to a greater or lesser degree of the deeper blood-vessels, and a corresponding congestion of the more superficial portions. Hemorrhage, therefore, is of frequent occurrence, and thus is produced the most common sympton of uterine fibroma. It stands to reason that the removal of the congested and pathologically spongy mucoso will temporarily relieve this distressing symptom. Hence curettement finds a place in the conservative operative procedures for the relief of this neoplasm.

The special indications for the operation are repeated and excessive hemorrhages, especially when associated with the presence of a submucous fibroid, which shows a tendency to become pedunculated. Not only will the hemorrhage be considerably lessened, but the removal of the surface tissue will favor the spontaneous eunclеation of the tumor from its bed and its final cure. If the tumor has become distinctly pedunculated curettement must give place to a more radical procedure, to be mentioned directly. Curettement also finds a field in the treatment of the endometritis that persists after the removal of the uterine growth by some other or more rapid method, such as myomectomy, supra-vaginal or from below. It must be remembered, however, that the operation of curettage is by no means the simple and the harmless procedure that we have been led to believe. If not properly performed it may be attended by a dictinct mortality, averaging two per cent, as was stated at the recent meeting of the American Medical Association at Denver—greater, as you will perceive, than that attendant upon properly performed abdominal section for the removal of the appendages. This mortality results primarily from sepsis, and secondarily from perforation of the uterine wall, which is distinctly softened and attenuated in spots as a result of the long-standing metritis and endometritis.

MYOMECTOMY.—Myomectomy is *par excellens* the operation to-day. It is right here that one may especially see the conservative tendency that is rapidly invading the field of abdominal and pelvic surgery. Where three years ago nothing short of a hysterectomy would have been performed, to-day the less radical method of eradication of the morbid growth with conservation of the healthy uterine tissue is the ideal method. This has very properly been pronounced at once the most radical of the operative procedures for the cure of this tumor and the most conservative. Unfortunately, it has not yet been generally adopted, even by some of the most expert of the gynecologic surgeons, partly because of the satisfactory results that have attended the more radical operation, but largely because of the timidity of the operator, who for some occult reason fears to *incise* where he would boldly *excise*. The present growing popularity of the operation is largely due to the manly stand taken by the prince of operators, Kelly, of Baltimore, who has demonstrated its practicability even in the presence of multiunclear involvement of the uterus. The operation may be performed according to the exigencies of the given case, either through the vagina, or through an abdominal incision.

Vaginal myomectomy may be employed in the case of submucous fibroids which have not become pedunculated, the mucous membrane being incised and the tumor enucleated and removed by means of traction with volsellum forceps. The accompanying hemorrhage is controlled by the use of antiseptic gauze tampons. Care must be observed not to open up the peritoneal cavity in these intra-uterine operations. A preliminary dilation of the os is necessary in most instances. The vaginal operation may also be employed to remove small sub-peritoneal growths that are attached to the uterine wall close to the cervix, an anterior or posterior

kolpotomy being performed as the preliminary operation. The great dangers of the operation are hemorrhage and sepsis, both of which must be prevented by appropriate precautionary measures.

Abdominal myomectomy is rapidly supplanting abdominal hysterectomy in a large percentage of the cases of extensive fibroid involvement. Not only by such a procedure are the uterine appendages preserved, and the patient thereby saved the intense suffering of the induced menopause, but the uterine body itself is frequently left in a practically intact condition, and even serviceable for the child-bearing function. Not only can one immense fibroid nodule be enucleated without much difficulty, but even twenty or more smaller growths scattered throughout the organ may be safely extirpated and a useful uterus left. Especially valuable is the operation in the case of a single tumor involving one or other of the uterine walls, from which it may be entirely removed, the capsule being but lightly adherent to the growth, the limitations of which are always well-defined. After such an operation a rapid involution is induced in the hypertrophied uterine tissues, which in a remarkably short space of time return to their normal condition. It would be untrue to state that this operation is easier in performance than is the hysterectomy. Like all conservative processes the technic is more delicate and intricate, and the operation proportionately more tedious.

The *technic* consists in the incising of the abdominal wall to a sufficient extent; the freeing of adhesions and lifting the uterus and tumors through the incision, so as to shut off the peritoneal cavity as far as possible from the seat of operation; and the enucleation of the tumors *seriatim*, by making appropriate incisions through their capsules. In the case of pedunculated growths the flaps are made close to the point of attachment to the uterus, while the capsules of sessile and larger growths are opened on the summit, and the tumors shelled out by means of special spatulæ. Hemorrhage is then controlled by deeper or more superficial satures, according to the size of the excavation, any superfluous tissue being trimmed away, and extreme care being taken to bring the parts accurately together. If need be, tiersuturing may be employed, the deeper parts being united by fine chromcized catgut, and the more superficial by fine silk.

The special *indications* for abdominal myomectomy are: First, cases occurring in young women, under 35 years of age, in which the symptoms are becoming troublesome and the tumors are not deeply situated in the broad ligaments; secondly, cases occurring in sterile women, who are in hopes of future conception; and thirdly, cases in which, even in the women near the menopause, there is a special aversion on the part of the patient to the loss of her generative organs. Provided the uterine structure has not been largely destroyed, the mere multiplicity of the tumors does not contraindicate the operation. The dangers of the operation to be borne in mind, as indicated by Bland Sutton, are: 1. Severe primary hemorrhage and subsequent oozing. 2. The greater risk of sepsis. 3. The protracted operation. 4. A resultant sinus in the uterine

wall, with danger of subsequent rupture. 5. A protracted convalescence. After the menopause the operation of hysterectomy without removal of the appendages is probably the better operation to perform.

MORCELLATION AND AVULSION.—These operations, the former of which has been very graphically described under the term of "piecemeal surgery," are applicable only in one class of fibroid tumor, namely, in pedunculated submucous growths. If after dilatation of the os uteri, the fibroid polyp be found on examination to be but loosely attached to the uterine wall by means of a more or less elongated and slender pedicle, it may be grasped by a pair of avulsion forceps and twisted off. Practically no hemorrhage follows this operation, and should such occur, the mere introduction of a tampon of antiseptic gauze will control it.

MORCELLATION (morcellement) on the contrary, is not only a hemorrhagic operation, but is also unsatisfactory and tedious. It should only be adopted when vaginal myomectomy is out of the question, and only in the case of moderately pedunculated growths. The operation is sometimes supplemented by division of the anterior wall of the cervix and the uterus for a varying distance with ligation of the uterine arteries.

LIGATION OF THE BLOOD-SUPPLY.—This operation may be performed in one of two ways. Either the abdominal wall may be incised and the broad ligament exposed from above, the blood supply being arrested by ligatures applied to both of the ovarian arteries and to one uterine artery, as first performed by Byron Robinson, of Chicago; or the vaginal vault may be incised and the uterine arteries ligated from below, as was suggested simultaneously by Franklin H. Martin, of Chicago, and S. Gottschalk, of Berlin. The objects of these procedures are two-fold, namely, to control the hemorrhage, and to induce an atrophy of the fibroid growth by depriving it of the nourishment through the blood-channels, as well as by altering the nutrition of the uterus by interfering with the nerve-supply.

The advantage claimed for Martin's operation are its low or absent mortality; it does not open the peritoneal cavity; it does not unsex the woman; there is no external incision and subsequent scar-formation; it may be employed in those grave hemorrhagic cases in which more radical procedures would immediately prove fatal; and it may be safely resorted to in the grave intra'igamentous cases in which the shock of a more radical operation would be very severe, or even fatal. The indications for the operation are as follows: 1. Interstitial fibroids of moderate size associated with hemorrhage and rapid growth at about the time of the climacteric. 2. All forms of hemorrhagic and rapidly growing fibroids of moderate size in which the patient refuses any more radical procedure. 3. All bleeding or growing interstitial fibroids which have not yet become a source of danger from their bulk, and which from their situation must be mainly nourished by the uterine arteries. 4. Small subperitoneal fibroids springing from the lower uterine segment, and not adherent to adjacent structures, through which adhesions considerable nourishment may be obtained. The operation should not be performed: (1) In the

case of pedunculated tumors of the submucous or subperitoneal form; (2) in tumors of excessive size, for fear of inducing rapid degeneration of the growths; (3) in tumors already the seat of degenerative processes, malignant or otherwise.

The *technic* consists in careful vaginal asepsis; dilatation of the cervix with tamponade of the uterine cavity; opening of the lateral vaginal vaults by semicircular incisions and freeing of the bases of the broad ligaments; double ligation of each uterine artery with division of the vessel between the ligatures; irrigation of the wounds and closure by means of continuous catgut sutures. The *dangers* of the operation are: 1. The possibility of ligating or otherwise injuring a ureter. 2. The difficulty occasionally experienced in findingthe blood-supply. 3. The danger of causing necrosis or caries in the tumor. Should the operation not prove successful a subsequent hysterectomy may be the more readily performed.

CASTRATION.—Castration, salpingoöophorectomy, or Battey's, Tait's or Hegar's operation, as it is variously known to gynecologists, is the lesser of the more radical procedures that have been resorted to in the effort to arrest the growth of uterine fibromata. Its object is precisely that of the method just considered, namely, to lessen the blood-supply from above, plus the early production of an artificial menopause with the atrophic changes that supervene at that momentous epoch in the woman's life. The *indications* for such an operation are: 1. Cases in which the tumor occurs in young women, and is showing a tendency to become hemorrhagic, or to assume a rapid growth. 2. Small fibroids that show a tendency to become intraligamentous. 3. Cases in which it is not deemed advisible to remove the entire growth, because of extensive bowel-adhesions, or on account of the depressed condition of the patient. The *contraindications* are: 1. The presence of urgent pressure-symptoms, as in fibroids of the lower uterine segment, whereby it becomes impossible to wait for the slow shrinkage in the bulk of the tumor. 2. Excessive size of the tumor, for fear of the production of necrotic changes. 3. Symmetrically developed myomatous tumors, which probably get their main nourishment from the uterine blood-vessels. 4. Edematous or telangiectatic tumors. 5. Subserous growths, which can better be removed by the operation of myomectomy. The disadvantages of the operation are the early production of the menopausal symptoms, the prevention of the possibility of subsequent conception; and the possibility of failure, because of the continued blood-supply from below. The technic is that of simple abdominal section with removal of the appendages.

SUPRAVAGINAL HYSTERECTOMY.—Supravaginal hysterectomy with extra peritoneal treatment of the stump, or the Baer or Stimson-Baer operation, as it has been designated, is an ideal operation of its kind, and is only losing ground because of the increasing tendency to conservatism in surgery. It was my good fortune to assist Dr. Baer in the first forty odd operations of the kind performed by him, and I am, therefore, in a position to state that in the suitable cases it is by far the best operation that has

been proposed. Today, however, its limitations are much greater than they were three years ago, and justly so. In order to avoid all the unpleasant sequences of castration, in order to reduce the mortality of abdominal section in general, and in order to favor the further propagagation of the race, it is but proper that the operation of hysterectomy be restricted to those cases in which any other procedure is contraindicated.

The *indications* for the operation are, therefore: 1. Cases in which there are urgent pressure-symptoms. 2. Cases in which other methods, including the more conservative operations, have failed. 3. Tumors of excessive size, which are becoming or have become intra-abdominal. 4. Tumors that have undergone degeneration, malignant or otherwise. 5. Large intraligamentous growths. 6. Where there is associated grave disease of the uterine appendages. The technic of the operation consists in the making of an abdominal incision; the freeing of all adhesions and the lifting of the tumor through the abdominal incision; ligation of the ovarian arteries on either side with preservation, if possible, of the appendages; division of the broad ligaments upon either side; ligature of the uterine arteries in the broad ligament tissues all about the level of the internal osuteri; the formation of two peritoneal flaps, one from the anterior and the other from the posterior aspect of the uterus; a wedge-shaped division of the cervix from before backward; closure of the cervical incision by a transverse line of sutures, thus shutting off the cervical canal; approximation and suturing of the anterior and posterior peritoneal flaps; suturing of the broad ligament on either side; irrigation of the pelvis, and closure of the abdominal incision.

Finally, *total extirpation* of the uterus by vaginal section for fibroid tumor is, as has been tersely stated by A. H. Goelet, both unnecessary and unjustifiable, since tumors which are sufficiently small to permit of removal in this manner, either need not be interfered with at all, or may be treated by one of the less radical operative procedures.

Luxation of Eye from Blowing the Nose.—Schanz (*Beiträge zur Augenheilkunde*, Heft 34, 1898) reports the case of a glass-blower who, while blowing, had the gas jet blown into his face, which caused him to sneeze and violently blow his nose; the eye became displaced forwards out of its socket, but was replaced, with some force, by a fellow workman. He consulted Shanz. who expressed some skepticism as to his story; he then blew his nose, and the eye became proptosed. Shanz pressed it back; the lids were tense with air and crackled when touched. The air could be partly expressed. In a week the emphysema had entirely subsided, and some inflammation of the disc had also disappeared, and vision was normal. The patient had always been accustomed to inflate his cheeks, and thence expel the air in the process of blowing glass, and not directly from the lungs. This had led to an increase in the patency of Steno's duct, so that the parotid gland became inflated at the same time as the cheeks. Examination of the nose failed to reveal where its walls were perforated.

EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

Indurative Mediastino-Pericarditis in an Infant, North-Eastern Hospital for Children: under the care of Dr. J. H. Sequeira. Notes by Dr. Blumfield (*Lancet*, Dec. 31, p. 1765.)—The following case is an excellent example of a rare condition which has received but scanty recognition. The first case seems to have been described in 1854 by Griesinger, and up to the present about 25 cases have been recorded. Their etiology is uncertain, though it is not improbable that many are associated with tubercle. It is possible also that some originate from a septic mediastinitis.

A male infant, aged 15 months, was admitted October 1st, 1896. In August there had been bronchitis and in September swelling of the face and legs. The case was sent to hospital as one of meningitis owing to a peculiarity in the child's cry. The infant was pale but otherwise apparently healthy; he cried constantly unless he was nursed but he did not appear to be in pain. The temperature was 99° F., the pulse was 80, regular, and of fair size, and the respirations 20. The tongue was clean.

The area of cardiac dulness was enlarged upward reaching to the upper border of the second left intercostal space; it extended also beyond the middle line of the sternum except over the manubrium. The heart sounds were normal. The feet and legs felt cold and pitted slightly on pressure. There was no albuminaria. The infant took his food and slept well. He usually sat up, while sleeping he lay on his back.

The condition remained unchanged, except that on some days there was blueness of the lips and ears, until November 3. There was then an obvious amount of fluid in the abdomen, the arms and legs were cold and blue, and the legs were considerably œdematous. Distention of the veins of the neck was noticed. On the 10th the edge of the liver was palpable 2½ inches below the costal arch, and on the 23rd there was extreme ascites with much œdema of the abdominal wall. The urine contained phosphates and about ⅛ albumin. On the 30th there was much diarrhœa, and on December 2 the infant died with all the symptoms of cardiac dilatation.

The necropsy showed the mediastinal tissues greatly thickened and adherent. The anterior mediastinal glands were enlarged and presented foci of caseation. The left lung was adherent to the chest wall at the apex and over the posterior surface of the lower lobe was some thickened and adherent pleura. The pericardium was about three-quarters of an inch thick, fibrous, and adherent everywhere to the heart, and the fibrous tissue spread upwards around the great vessels. Firm adhesions united the pericardium with the thickened anterior and posterior mediastinal tissues. The left pleura was adherent to, but separable from the pericardium. Both ventricles were dilated and hypertrophied. There was no

evidence of tubercle. The abdomen contained four pints of ascitic fluid. The liver was large, "nutmeg," and fatty; the kidneys and spleen showed changes due to venous engorgement.

Dr. Thomas Harris in 1895 published a monograph on mediastino-pericarditis. The youngest patient mentioned was a child, aged 2 years. The diagnosis is difficult. In the present case, except an increased area of cardiac dulness and an occasional lividity of the extremities there was nothing for weeks to lead anyone to suspect any affection of the heart.

Acne, Lupus, and Leprosy, and their relation to the Nasal Fossæ.—Dr. Sticker (*Wien. Med. Presse*, 1898, No. 42, col. 1660) lays stress on the frequency with which many diseases affecting the lymphatic system of the face have their starting point in lesions of the nasal mucous membrane. The tendency of erysipelas to originate in such a manner is well known, and glanders in animals has a similar starting point. In leprosy it is the rule to find ulcerating lesions of the anterior nares in the great majority of cases (80 per cent.), and it is legitimate to believe that this constitutes the seat of primary inoculation. The occurrence of lupus vulgaris in the nose is also well known, but a similar manifestation in lupus erythematosus is a more novel assertion. The writer recounts two cases in which ulceration of the nasal cartilages occurred in this disease, and in which tubercle bacilli were found in the lesions. [It may perhaps be permissible to doubt whether these cases were not rather instances of the superficial form of lupus vulgasis to which the name "erythematodes" has been applied. Such unusual cases would need very close examination before they could be admitted as proof of the tubercular nature of lupus erythematosus.] The occurrence of ulcers of the nares as a source of acne is also a somewhat novel discovery. The writer lays stress on the importance in all these cases of attention to the condition of the nose, from which the mischief starts, and states that by antiseptic irrigation of the nostrils, he has succeeded in curing cases of acne which had proved rebellious to all other treatment. He finally suggests that it may some day be found that measles, scarlet fever, smallpox, etc., are diseases primarily of the lymphatics of the skin, starting in the mouth or nose, and not general blood diseases, as they are usually considered, just as enteric fever has its main localisation in the intestine, the bacilli not passing into the general circulation.

Peculiar Cardiac Physical Signs in Phthisis.—J. Burnet, M.A., M. B. (*Lancet*, November 19, p. 1323; December 10, p. 1548; and December 31, p. 1816).—Attention has recently been called to the presence of cardiac impulse and sounds on the right side of the chest, although on post-mortem examination the heart was found in its normal position. In the cases referred to there existed cavity formation at the upper part of the right lung, with consolidation of the lower lobes. At first sight it seems difficult to account for the peculiar phenomena observed. It is a well known fact that during respiration cardio-pneumatic sounds are often produced which simulate closely organic cardiac murmurs, and, indeed, are often mistaken for these. They may be heard either in

cardiac systole or in cardiac diastole, and at times during both movements of the heart. Where there exists a cavity in the lung the sounds produced in that cavity may give rise to similar cardio-pneumatic murmurs In the cases already referred to the cavities present were situated close to the cardiac organ, and, moreover, had, so to speak, a bridge of consolidated lung connecting the heart with the cavity. In this way the cardio-pneumatic murmurs were conducted downwards from the cavity to the intercostal space on the right side over which they were audible. In a similar manner the impact of the heart was rendered visible and palpable on the right side of the chest by this combination of cavity and consolidation. It would appear that the presence of consolidated lung cannot of itself cause this conveyance of cardiac impulse, else it would be observed in cases of lobar pneumonia; there must also be cavity formation present above the consolidated area. It is the presence of a cavity that is one of the *sine quâ nons* of cardio-pneumatic murmurs in phthisis, and it is likewise the essential in the conveyance of cardiac movement to the right side of the chest. During the stage of cavity formation in phthisis he has frequently discovered the presence of these so-called cardio-pneumatic sounds not only in the region of the cavity, but at an entirely opposite part of the chest, and have always observed that in such cases there was a well-defined bridge of consolidated lung substance existing between the cavity and the area, other than that of the cavity itself, over which these murmurs were audible. The cardiac impulse is conveyed in a similar manner, the transmission being due to the peculiar combination of cavity and consolidation in direct proximity to the heart.

Emphysema from Malignant Disease of the Sigmoid Flexure.—H. Kerr, M.A., M.B. (*Lancet*, November 26, p. 1391).—A demented woman, aged 66, in good health, and well nourished, vomited and appeared to have epigastric pain. She looked pale and ill. There was extensive emphysema over the whole of the left side and back, extending from axilla to ilium. Some swelling was noticed over the sigmoid flexure, which disappeared on manipulation, and was supposed to be due to intestinal gas. On the second day the emphysema was more extended, and the swelling was more pronounced. The pulse was 120, and temperature 101°. The skin over the lower part of the chest and back was red and indurated. During the next four days she became worse; she vomited once or twice, and died on the seventh day. The necropsy showed air in the tissues of the chest, and diffuse suppuration. In the left iliac region was a cavity containing liquid, fæcal matter, and gas, with a small opening leading to the intestine. The sigmoid flexure was adherent to the abdominal wall and the malignant stricture. The large intestine was much diluted.

The Nature of Erysipelas.—Hutchison (*Archives*, viii., p. 1,) states that there are many details respecting the nature of erysipelas which are but ill understood. Though undoubtedly contagious, it is probable, from clinical evidence, that a great number of cases originate without any introduction of contagious matter from without. it is probable that the

micrococcus, having once gained access to the cutaneous tissues, never afterwards leaves them, and may remain there completely latent for indefinite periods, ready at any time, on provocation, to manifest its activity. Also, it is probable that the micrococcus often exhibits its powers not alone, but in association with other microbes, or in a sort of partnership with the proclivities of the patients' cells. There is no one malady which, in reference to the total of its clinical symptoms, can claim the name erysipelas exclusively. We know well what we mean by the word when applied to typical forms, of which there are two or three at least; but there are a number of others which, whilst standing in close relationship, are not typical. In recognition of this, he prefers to speak of "erysipelatous inflammations" rather than "erysipelas." From the clinical standpoint, an inflammatory process is "erysipelatous," whenever the lymphatic spaces are involved in a rapidly spreading inflammation, which produces œdema, advances by a congested border, and quickly subsides in the part first attacked. Œdema vesications and a spreading edge are the features which characterise it. His suggestion does not conflict with the generally accepted doctrine of a specific microbe. But he does not regard the physical demonstration of this as materially helping the problems of the clinician, who has still to ascertain the conditions which limit and modify the activity of these germs, and the special character of the very varying symptoms.

The characteristics of erysipelatous inflammation are by no means always present together. In rare cases the florid congestion may be wholly absent. He has seen œdema without any trace of congestion spread from an operation wound, and run almost over the whole cutaneous surface, followed by speedy subsidence and subsequent desquamation. In every feature these cases simulated typical erysipelas, except in the dilatation of blood vessels. He has long recognised these forms under the name "white erysipelas." There is also another form, in which blood staining rather than congestion takes place, and the erysipelatous area is brown. It is not at all infrequent to witness erysipelatous dermatitis without vesications. The abruptly-defined border, a most valuable character in diagnosis, must not be overrated. It may be but slightly marked, or it may be present at one part of the edge and absent at others. Œdema is absolutely essential, but it may very much in amount and character. One attack of erysipelas does not prevent others, on the contrary, it predisposes.

Constitutional Effects of Superficial Burns.—Bardeen C. Russell, M.D. (*Johns Hopkins Hospital Reports*, vol. vii., No. 3, p. 137, 1898).—In the cases of five children so severely burned that they survived only a few hours, the pathological changes were swelling of the liver and kidney, softened and enlarged spleen, and above all, swollen lymphatic glands and gastro-intestinal lymph follicles; the hyperæmia of the thoracic and abdominal organs was moderate. In the blood the most striking change was a considerable fragmentation of the red corpuscles; many cells containing fragments of red corpuscles were seen in the spleen,

and some in the liver; thrombi, except in the skin, were uncommon The lymphatic glands from the thorax and abdomen showed œdematous swelling and focal changes in and about the germinal centres.

But little attention has been paid to the lymphatic glands in superficial burns. Russell found that wherever lymphocytes were, from the small nodules in Glisson's capsule of the liver to the largest lymphatic glands, these alterations appeared; apparently the first stage was œdema, followed by swelling of the lymphocytes in the germinal nests with vacuolation and nuclear changes. The germinal centre by this means expands until it reaches a size large enough to be visible to the naked eye. The protoplasm of the cell breaks up, certain endothelial cells in its neighbourhood act as phagocytes taking up the fragments of protoplasm and nuclei. In the Malpighian corpuscles of the spleen, the same changes are to be recognised.

How are these changes to be explained? Russell assumes that toxines elaborated by the destruction of the superficial layers of the skin, pass into the circulation, and, carried by the blood into the lymphatics, escape into the plasma towards the centre of the follicle where the arteries of the lymph glands break up into capillaries; this rapid flow of plasma gives rise to the œdematous swelling and tends to sweep the lymphocytes into the perifollicular lymph sinuses. Nearly identical changes have been found in the lymphatic glands of children who have died from various infective diseases, and similar lesions can be produced in animals by the injection of ricin, abrin, and similar complex organic poisons. Death evidently is the result of an acute toxæmia.—J. G. Adami, *Montreal Med. Jour.*

Pyrexia and Hyperthermia.—Meissen (*Berliner klin. Wochenschrift*, Nos. 23 and 24, 1898,) reports a case of remarkably high temperatures. A woman, aged 23, entered the institution at Hohenhonnef on account of what was presumably early phthisis. The most annoying symptom was a constant dry, irritable cough. Tubercle bacilli were not found, though there was impaired resonance at the left apex. On account of slight rises of temperature rest in bed was ordered. After this the temperatures recorded were abnormally low. The patient, however, had been taking her own temperature, but when this was done by, and under the constant observation of, her medical attendants, the thermometers, which were reliable instruments, frequently rose to over 110·6° F., whether they were placed in the axilla, mouth, or rectum. The general condition was but slightly disturbed, though sometimes there was anorexia, headache, or slight delirium. The type of fever was intermittent. Nothing except the dullness at the left apex could be found, and there were no malarial parasites in the blood. After going to her own home the family attendant found on one occasion a temperature of 114° F., which was accompanied by unconsciousness and delirium. After quinine had been taken for a time the fever suddenly ceased, the cough gradually disappeared after being present for a year, the general condition improved, and the physical signs in the lungs became perfectly normal.

The patient, though rather excitable, was not of a typical hysterical type. Still Meissen believes the cough and the high temperature were hysterical, the latter from a disturbance of the central thermotaxic mechanism. He proposes to call such rises of temperature, not depending on the introduction of toxic material, and not accompanied by the usual symptoms of fever, hyperthermia, as opposed to true pyrexia.

The Outlines of the Abdominal Organs.—Pichler (*Centralbl f. innere Medicin*, No. 36, 1898,) states that the shadow of the lower border of the normal liver may be seen under favourable conditions moving with respiration: (1) the patient must be in the dorsal position; there must be a good light coming from the head of the bed; (3) the abdominal walls must not be too thick or tense; (4) there must be no flatulent distension of the upper part of the abdomen; (5) the patient must breathe deeply. The outline of the right lobe is seen more plainly than the left. The outlines of the greater, or even of the lesser, curvature of the stomach, of the spleen, and of the intestines can also be observed under certain circumstances. Clinically the sign is valuable, if palpation or percussion are impossible owing to tenderness. Litten (*ibid.* No. 40,) stated that he had observed this liver shadow before he discovered his "diaphragm phenomenon," and had published an account of it in 1892. He considered that the lower edge of the liver could frequently—not occasionally, only as Pichler supposed—be seen to move with respiration, and, together with the diaphragm phenomenon, made an exact estimation of the size and mobility of the liver possible. Stern (*ibid.*, No. 43,) confirms Pichler's observation, that the outlines of the gastric curvatures may be seen to move with deep respiration, and considers this fact to be a great diagnostic help. Thus, if the outline of the lesser curvature of the stomach be seen, it is certain that the stomach occupies an abnormally low position, and dilatation can be at once recognised.

Severe Sporadic Cretinism without Amenorrhœa.—Byrom Bramwell, M.D., F.R.C.P. (*Lancet*, December 10, p. 1547).—This is the only case of the kind known to the writer. The patient was a woman aged 36, who showed typical and severe cretinism. Her height was thirty-six inches, and her body was very broad; the back was markedly curved in the lumbar region, and the abdomen was very large and prominent. The face was swollen and full; the skin of the eyelids was translucent; the nose was squat and broad, pug shaped; the ears were rather large; the mouth was large; the lower lip was pouting, but the lips were not much swollen; the tongue was not protruded between the teeth; the teeth in the upper jaw were all wanting; and the palate was very broad and flat. The head was covered with a profusion of dark brown, coarse hair. The neck was very broad. Enormous fatty swellings were present above the clavicles. There was also some fatty swelling in the anterior fold of the left axilla. The forearms were colossal, and the tibiæ were somewhat bent inwards. The hands were enormously broad and large. The nipples and areolæ were somewhat developed, and there was a fulness in the position of the breasts. Since the age of twenty-five

years the patient has menstruated every month. On one occasion (a year and a half ago) the discharge stopped for three months. There were no public hairs. She was naturally of a very cheerful disposition, fond of fun and company, but her intellectual development was that of a child of five or six years.

What is Tabes Mesenterica in Infants?—In the *Lancet* of December 17, p. 1662, Dr. Walter Carr very trenchantly exposes a prevalent error. He says: "I fully agree, therefore, with the statement in Ashby and Wright's 'Diseases of Children,' that 'mesenteric disease is much more frequently diagnosed than discovered post mortem,' but if so what is the real nature of the thousands of fatal cases of so-called tabes mesenterica in young children? Simply, I believe, marasmus, the result of chronic gastro-intestinal catarrh. An infant is brought up by hand; its food disagrees, it gets gastro-intestinal catarrh, which leads to distension of the abdomen, griping pains, chronic and very intractable diarrhœa, and occasional vomiting. Of course, the child wastes steadily; it has perhaps irregular pyrexia (though I suspect that the temperature is not as a rule very systematically taken in these cases). The mother suggests that the child has 'consumptive bowels,' the medical practitioner agrees; it is the simplest way out of the difficulty, and saves the necessity of taking much further trouble in treatment, and after death he writes 'tabes mesenterica' on the certificate. It is an attractively impressive term, and no doubt conveys much consolation to the afflicted parents. These cases are to be seen of course, by the hundred at any children's hospital, but they are not tuberculous—the necropsy proves that I have notes of nearly 100 post mortem examinations on such cases, all children under two years of age. In only one was any abdominal tuberculous lesion present, and that was merely early caseation in the mesenteric glands, and one nodule in the intestine, yet in very many 'tabes mesenterica' might have been diagnosed with much confidence but for the wholesome corrective of pathological experience."

Treatment of Sciatica.—Castro (*Revist. de Med. y Cirugia practicas*, November, 1898, p. 498).—A curious treatment of sciatica is advocated in this paper, namely, cauterisation of the helix of the ear of the opposite side. It was suggested to Dr. Castro by a patient who had heard of it as successful in veterinary practice, and after a search through medical literature, in which he discovered allusions to such a treatment by a few writers (Grisolle, Soulier), he felt justified in putting it to the proof. Very remarkable success was obtained in a series of cases, of which four are quoted, showing that patients who had been martyrs to sciatica for long spaces of time and had exhausted all recognized methods of treatment, were almost instantaneously relieved by this simple means. Patients who had been incapable of ever standing alone were able immediately after the application of the cautery to walk from the room. In one case a recurrence of pain in the opposite leg to that first affected was cured by cautery of the other ear. The author admits that he can give no explanation of the cure effected. The operation was apparently

performed without an anæsthetic, the thermo-cautery being employed, heated to a white heat; a single incision was made through the central part of the cartilage of the helix, and an antiseptic dressing was afterwards applied.

Diaphragmatic Pleurisy.—Zuelzer *Münchener med. Wochenschrift* November 22, 1898) gives a description of pleurisy as it occurs between the diaphragm and the lung; a form which is very apt to give rise to localized encapsuled empyemata. There are certain special characteristics which enable the diagnosis of this condition to be made even in the absence of physical signs. These consist chiefly in certain tender points. The first is round the base of the thorax at the level of the insertion of the diaphragm; the second is in the posterior triangle of the neck where the phrenic nerve lies on the scaleni muscles; and the third is found where an imaginary line prolonged in the direction of the tenth rib cuts the parasternal line. It was first described by Guéneau de Mussy and named by him the "*bouton diaphragmatique.*" The presence of tenderness and pain in this position is most important, and is almost pathognomonic of diaphragmatic pleurisy, more especially of the localized suppurative form. De Mussy and most writers since him have considered this to be the tender point of the phrenic nerve, though von Ziemssen disputes this on the ground that the function of this nerve is entirely motor. Other peculiarities of this variety of pleurisy are:—

(1) The pain is abnormally violent and diffuse. (2) Movement is almost suppressed in the hypochondrium and base of the thorax on the affected side. (3) Physical signs may be absent, or consist in a limited tympanitic resonance at the extreme base, and *minus* breath sounds, owing to the compression of the lung by the effusion. (4) Occasionally there is pain on swallowing as the food passes the diaphragm, (5) Hiccough may be present, either from direct irritation of the diaphragm, or possibly of the vagus or phrenic nerves.

It is important to remember that these effusions, when near the centre of the diaphragm, are out of reach of the exploring syringe, One of the cases seen by the writer is a striking illustration of the value of de Mussy's point in diagnosis. A woman, aged thirty, fell ill with fever and pain in the breast. There were no abnormal physical signs in the lungs, and an exploratory puncture gave a negative result; the phrenic nerve in the neck, however, was tender and the *bouton diaphragmatique* extremely painful, and by these symptoms alone Dr. Bouveret, of Lyons, diagnosed suppurative diaphragmatic pleurisy, and immediately handed the case over to the surgeon. An encapsuled empyema was found and evacuated. The woman recovered.

Acute Mania Complicated by Pneumonia.—Rosenthal (*Münchener med. Wochenschrift*, October 18, 1898) reports a case of a woman who was first treated for bronchitis one Feb. 7 The same day she developed acute maniacal symptoms with hallucinations, and was removed to an asylum on February 10. Fron the 13th she was fed with the tube, as she refused all nourishment. On the 15th the temperature rose to

100° 4 F., there were *râles* over the right lung and a pleuritic rub. On February 16 she died. *Post mortem.* Lobar (but not fibrinous) pneumonia of the right middle and lower lobe, with patches of consolidation in the right upper and left lower lobe. The exudation was of a peculiar mucoid character. Double fibrinous pleurisy. Acute hæmorrhagic pachymeningitis, and acute purulent leptomeningitis. Slight recent acute inflammation of chronic granular kidneys. The nature of the pulmonary alveolar exudation could not be decided. Cultures taken from it produced copious colonies of Friedländer's bacilli, streptococci, and diplococci, which were probably Fränkel's pneumococci. The streptococci were chiefly located in the interstitial tissue, the bacilli and diplococci in the alveoli. Pure cultures of the same streptococcus, same as present in the lungs, were obtained from the meningeal exudation. The meningitis affected chiefly the cortical psychic areas, and had spread from thence apparently a short time before death.

Rosenthal believes that in this case the bacterial inflammation of the meninges directly irritated the underlying cortex. If so, it is the only known case of meningitis with purely psychic symptoms. He gives the probable order of events as follows: (1) Bronchitis, on which was grafted a (2) general infection with streptococci; (3) insidious progress of the septicæmia from the chief focus on the surface of the hemispheres, with psychic symptoms without fever; (4) as exhaustion supervened, an atypical pneumonia followed from a mixed infection secondary to the bronchitis. He admits, however, the possibility that the psychosis and the infective disease were simply coincident, the meningitis arising later as a complication.

Pretuberculous Enlargement of the Spleen.—Tedeschi *Riforma) med.*, Nos. 18-20, 1898) has studied the relations between the spleen and tuberculous infection in the hospital of the Naples prisons, which are said to be saturated with tubercle.

Hitherto we have known that in acute miliary tuberculosis the spleen may enlarge as it does in typhoid fever. In the more chronic form of tuberculosis atrophy of the spleen is more common than hypertrophy, especially when tuberculous diarrhœa is present. The writer's researches have put him in a position to prove that there is a form of splenic hypertrophy which precedes tuberculosis, and which, whether of toxic or infective origin, represents a defective reaction of the organism in the struggle against the parasitic invasion.

Bilateral Acute Labyrinthitis.—Dr. Percy Webster (*Intercolonial Medical Journal of Australasia* of October 20th, 1898) relates the following case. A healthy lad, aged 10 years, one day looked pale and ill. He vomited, became delirious and complained of pain in the head; he had to be held down in the bed. The acute delirium lasted 11 hours, after which he was quiet but lay muttering. He called out with pain when touched; moving the limbs seemed to cause great suffering. A times he would lie with his back arched and his head retracted. He was

ill for about two months and became very thin. He had giddiness, and after his recovery staggered at times, especially in the dark. Deafness was noticed before he recovered from the delirium, and remained permanent; it was total both for bone and aerial conduction. He complained of pain and constant buzzing in his ears. The fundi were normal, the knee-jerks were active, and there was neither ankle clonus nor paralysis. As the history was only obtained from his friends it was impossible to say whether the labyrinthitis was primary, or associated with meningitis, pneumonia, typhoid fever, or one of the exanthems, or whether it was secondary to otitis media.—*Lancet.*

Sulphonal Poisoning.—Dr. Lovell Gulland (*Lancet*, December 17, p. 1638).—An alcoholic man, aged 39, took 30 gr. of sulphonal nightly for insomnia—in all 1,200 gr. A week before death his gait was staggering and his speech was thick, which was attributed to alcoholism. He was stupid and sleepy though easy to rouse and intelligent when spoken to; motor power was greatly enfeebled and articulation imperfect. The urine was deep claret coloured. He died suddenly.

The necropsy showed that the liver was chocolate coloured, the kidneys not cirrhotic but congested, the spleen diffluent, the walls of the heart very fatty, the blood chocolate coloured, and the brain congested. Microscopically the liver showed no great change, but fatty infiltration at the periphery of the lobules and hyaline degeneration of the walls of the portal vein. In the kidneys the secreting epithelium was only affected, the cells being shrunken into masses of granular protoplasm; the spleen was full of "shadow corpuscles" and the suprarenal capsules showed some columns in which the cells were small and shrivelled. The blood showed poikilocytosis.

As regards the symptoms co-ordination may be affected for weeks by a single dose. In chronic poisoning gastro-intestinal symptoms generally first appear, then nervous symptoms, ataxia, paralysis of the facial muscles, general convulsions, coma, etc. The urine contains hæmatoporphyrin as well as unchanged sulphonal. This case usually ends by heart failure. In acute cases the symptoms may come on suddenly; the sleep may be for days; hæmato-porphyrinuria seldom occur in such cases. The prognosis is, as a rule, good in acute but not so in chronic cases. Sulphonal is not readily soluble, and so may long remain in the intestinal canal or in the blood, as it is not easily excreted by the kidneys. The constipation which is usually present would assist in this accumulation. Sulphonal may cause death without producing hæmatoporphyrinuria. The cause of death is probably uræmia (using the term in its widest sense). In acute cases as the poison is slowly absorbed the stomach should be emptied at once and a purgative given. The kidneys should be encouraged to act freely. Large enemata of warm water have been found useful. In chronic cases the same remedies may be employed as well as large doses of alkalies to render the urine alkaline and so stop the formation of hæmato-porphyrin. The maximum daily dose for a man should be from 15 to 30 grs. It ought never to be given in tabloid

form. Hot alcohol (as whisky toddy) was the best vehicle. Patients ought to be kept under observation during the whole time the drug is being taken.

Addison's Disease in Children.—*Klin. therap. Wchnschr.*, Sept. 18.) Three cases occurred in children in Variot's clinic during the past year, and as the disease is rare in young children (only forty-eight cases have been recorded), the following account of the symptoms is interesting:—

In nearly every case tuberculosis of the suprarenal capsules was found. The symptoms were as a rule at first indefinite; the children appeared weak and apathetic, and disinclined for play; and in many the true diagnosis was further rendered difficult by tubercular manifestations in the lungs, kidneys, bones, joints and other organs. In many children the commencement of the illness was heralded by vomiting and diarrhœa, but in the great majority of cases the most important symptom was extreme and gradually advancing asthenia, the child avoiding the least movement, and even refusing to answer questions. Usually there was anorexia and nausea, and in many cases severe vomiting. Pains existed generally, sometimes in the back, sometimes in the abdomen, sometimes in the head, or in the bones of the extremities. The discoloration of the skin was generally slight at first, and seldom attracted much notice; but as the disease advanced, the pigmentation became darker, and was most apparent on the exposed parts of the body, face, hands, and neck, and also where there is pigment normally, such as the naval, genitals, and axillæ. Brown patches were also frequent on the mucous membranes. As a rule there were periods of remission and of renewed activity in the progress of the disease, which usually terminated within a year. Death was generally due to extreme weakness or to some intercurrent disease, and was often preceded by epileptiform convulsions, with rapid pulse and rise of temperature.—*Edinburgh Med. Jour.*

Food Poisoning (Atriplicism).—Matignon (*Medical Reports of Chinese Maritime Customs*, 1898) describes a form of food poisoning which he has named "atriplicism," of which he narrates twelve cases. It is produced by the consumption of the shoots of a kind of spinach (atriplex serrata). It appears to arise only in people who eat the herb uncooked and without being washed. It may therefore be due to toxic products secreted by a minute parasitic insect, colonies of which are often found at the top of young shoots. The disease is more common in women than in men, and is seen only in May, June and July, when the herb is edible. The symptoms come on within ten to twenty hours of ingestion. The first stage, which takes from fifteen to twenty hours to develop and lasts for from three days to a week, is that of infiltration. It usually commences with painful numbness, perhaps associated with formication of the hands. Œdema soon supervenes, with irritation and often cyanosis of the nails and finger tips. The distribution of the œdema is curious and characteristic; it is limited to the hands, forearms and face. On the forearms it affects the anterior and postero-external portions only; the elbow is free. The face is even more swollen than in Bright's disease, and is of an

earthy color. The hands are practically useless from the swelling and pain, their tactile sensibility is diminished, but that to heat and light is greatly increased, so that cases may be diagnosed by the way in which they are wrapped up for protection from the sun's rays There is no albumen in the urine, the pulse is slow, sometimes as infrequent as 52 per minute, and the temperature may be subnormal, In the next stage ecchymoses form on the affected areas, probably from rubbing and scratching. They vary in size and almost always ulcerate. The patient's general condition is worse, and there may be slight fever. In fairly healthy subjects this is followed by desquamation and resolution, but in the debilitated the ulceration is very persistent and terminates in cicatrisation, often with the formation of keloid. There were no complications except dry gangrene of the fingers in one case. The treatment consisted in a saline purge during the first two days of the disease.

The writer points out an analogy with erythromelalgia and Raynaud's disease. It is like the latter in sexual incidence, parts affected, and many of the symptoms; on the other hand, atriplicism spares the feet, and is not intermittent Laveran suggested that it was due to actual contact with the herb, since the exposed parts are alone affected, but Matignon has disproved this experimentally.—*Brit. Med. Jour.*, Dec. 3.

Fatal Chronic Constipation from enormous Dilatation of the Sigmoid Flexure.—By Peverell S. Hichens, M.A., M.B., B.Ch. (*Lancet*, October 29, p. 1121).—The patient was a young man aged 20. From the day of his birth to the day of his death he suffered from constipation, and his bowels were apparently never opened without recourse to artificial means. For the first week of life he was exceedingly ill, passed nothing but blood and water, and was not expected to live. He then began passing fæcal matter, but the motions were never those proper to an infant, consisting almost entirely of scybala, and they were passed with much pain and screaming. They were only obtained by ½ oz. doses of castor oil, which often had to be repeated two or three times in twelve hours. As the child grew the bowels were only opened by drugs, and with increased difficulty, and at the age of 12 months ½ pint enemas of soap and water were used. Later enemas of a whole pint had to be given, and very often had to be repeated two or three times. Later the bowels used only to be opened at intervals of ten days or a fortnight, and only after repeated enemas. A very large scybalous motion was then passed, which was generally succeeded by several loose motions in the next two or three days. The motions could only be passed by the help of gravity—i.e., squatting down over a chamber in the position which, as Dr. Lauder Brunton has pointed out, is the natural and proper one for defecation. The patient very often felt slightly sick before the bowels were opened, and was very much collapsed afterwards, so much so that he often had to go to bed for the rest of the day. His abdomen was always greatly distended, so that he could never button the bottom button of his waistcoat or the top button of his trousers. About a month before he died he was taken ill with influenza. Five days before death

he was seized with pains all over his body and slight swelling of the legs. He was treated for rheumatic fever. The night before he died he passed a fairly large motion. On the following morning he was seized with a severe pain over the heart, shortly afterwards he went to bed feeling fairly comfortable. During the night he suddenly got out of bed and fell down dead.

The body was brought to the hospital and a necropsy was made. There was very slight œdema over the feet and shins, but enormous general distension of the abdomen. The abdominal cavity was occupied by a tense shining viscus, presenting the appearance of a sac rising out of the pelvis and passing under the ribs, where it doubled on itself and returned to the pelvis again—the enormously distended sigmoid flexture. At the point where the sigmoid flexture left the descending colon it turned on itself and passed directly up the left side of the abdomen. The summit of the viscus then passed behind the ribs and xiphisternum with a gentle curvature and descended along the right side of the abdomen to the pelvis to join the rectum. Some little distance above the junction with the rectum, the viscus showed a distinct constriction. The remaining abdominal viscera were entirely concealed by the sigmoid flexture, which pushed the liver upwards and backwards, compressed the lungs and rotated the heart upwards and outwards. It contained an enormous amount of gas and a large quantity of semi-liquid fæces. The total length of the sigmoid flexture when it was opened and laid flat was 22½ inches. Fourteen inches from its upper end was a large cicatrix formed by an almost healed ulcer, probably stercoral in origin, which had caused the constriction above mentioned. The circumference of the flexture above the ulcer was 14 inches, at the ulcer it was 7¾ inches, and below 10 inches. These measurements, of course, represent the circumference of the flexture at its period of least distension, and they also show that the constriction at the site of the ulcer was merely a relative one and could have made no difference, or very little, to the onward passage of the fæces. The walls of the sigmoid flexture were uniformly greatly thickened. This thickening was shown on microscopical examination to be almost entirely due to great hypertrophy of the circular and longitudinal muscular fibres. There was also slight thickening of the submucosa. The small intestine showed no lesion, and was not at all distended. There was slight general distension of the cæcum and of the ascending, the transverse, and the descending colon. There was no sign of a fibrous band, kink, or constriction anywhere except at the ulcer above mentioned. The lungs were small and compressed by the abdominal distension, and were slightly œdematous and engorged. The heart was somewhat displaced, but was otherwise perfectly sound, as also were the liver and spleen.

This case appears to come under so-called "idiopathic dilatation of the colon." Dr. Hale White, in "Allbutt's System" (vol. iii., pp. 967-972), mentions that only 12 cases have been recorded in the last forty years, and he provisionally groups them under two heads—those in elderly patients and those in young children due to some congenital

inertness of the bowels. Whatever may be the initial cause—a temporary kink, as Rolleston and Haward (*Transactions of the Clinical Society of London*, vol. xxix, 1895) suggest, or the length of the sigmoid in children readily allowing kinking, as Jacobi (*Archives of Pediatrics*, vol. x.) suggests, or mere constipation and distension with wind or local spasm of the rectum, as Gee (*St Bartholomew's Hospital Reports*, vol. xx.) suggests, the attempted remedies in this case probably increased the disease. The patient moved in a vicious circle, and the sigmoid, already distended, was ever being more distended by the successive enemas. So far as could be judged from the post-mortem appearances the only possible treatment which could have had any permanent success would have been lumbar colotomy.

Aneurysm in a Boy.—S. H. Berry, M.B., (*Brit. Med Jour.*, December 10, p. 1,745)—A boy, aged 15, whilst playing, suddenly fell down unconscious. He was at once brought to hospital, but life was extinct. The pericardium was distended with blood clot. Below the line of reflexion from the ascending aorta was a transverse tear in the aorta, and below this was a large fusiform aneurysm, four inches vertically and three inches transversely. At the place of rupture the tunica média was thickened. There were no signs of syphilis and there was no history of rheumatism.

The Etiology of the Œdema of Bright's Disease.—Reichel (*Centralbl. f. inn. Medicin*, October 15, 1898) in a former paper concludes that an actual physical alteration of the tissues is brought about by the toxic subtanses retained in the blood owing to the insufficient action of the kidneys. This alteration leads to œdema on the one hand, and to a rise of arterial pressure on the other due to increased peripheral resistance. From this follows the hypertrophy of the heart

The writer is now able to confirm this theoretical view by actual experiment. He injected physiological sodium chloide solution hypodermically in cases of nephritis without œdema, and found that the artificial œdema thus produced was not absorbed for 5 to 10 days, while if the same were done in non-nephritic cases, even when heart disease was present, it disappeared in a few hours, or in three days at the latest. This proves that the absorptive power of the subcutaneous tissue is much restricted in Bright's disease.

According to Koranyi the normal transudation and absorption of the tissue fluids is regulated by the renal activity. It is, therefore, to be expected that absorption should be disturbed in cases of nephritis.

"Liver-Cough" an Undescribed Symptom of Hepatoptosis.—In the *Journal de Médecine Interne* of Oct. 15, 1898, M. Louis Vène relates the following case: A woman had suffered from cough for 18 years, which since she came under observation (in 1891) was dry and incessant. Drugs were useless. She was examined by a laryngologist and by a number of physicians, including Professor Simon Duplay. The diagnoses of nervous cough and of hysterical cough were made. She happened to break her

clavicle, and a bandage was applied for a month, which compressed the thorax and upper abdomen. During this period the cough was never heard, which was attributed to pre-occupation. M. Vène's attention was attracted to a peculiar symptom—the patient never coughed at night. She said, "I sleep very little, perhaps two or three hours a night; but whether I sleep or not I never cough lying down whatever be my position in the bed." Examination showed that the liver extended to the level of the umbilicus in the right hypochondriac region. Hepatic dulness began at a lower level in the upright than in the recumbent posture—at the seventh rib, The thorax was compressed with a flannel bandage, extending from the nipples to the umbilicus. The effect was remarkable. The patient had not a single fit of coughing. This result was maintained by bandaging from the pubes to the nipples with rigid material—cotton or flannel—but corsets and complicated elastic belts proved useless. In none of the various observations on hepatoptosis is cough mentioned as an important symptom. But since Hippocrates "liver-cough" has been known, and, curiously, in 1831, when hepatoptosis was unknown, J. B. de Larroque, physician to the Necker Hospital, in a work on "Certain Abdominal Diseases which Simulate, Provoke, and Maintain Diseases of the Chest," distinguishes "liver-cough" due to hepatitis and "liver-cough" coming on in the standing position caused by the weight of the organ. As to the manner of production M. Véne suggests that as the liver is (according to Faure) suspended from the vena cava, which is connected with the diaphragm, excitation of the latter produces the cough. He concludes that before making a diagnosis of hysterical cough the absence of any pathological reflex from the abdominal organs in connection with the diaphragm, and particularly the liver, should be ascertained.

Oleaginous Cathartics in the Treatment of Appendicitis.—Dr. Terry, Surgeon-General of the National Guard, New York (*Medical Times*), states that out of 51 cases under his personal supervision, 44 were successfully treated without operation. His method consists of at first giving cathartic doses of castor-oil with olive-oil, followed with hot water, until the bowels are thoroughly emptied. This is followed by enemas of glycerine and olive-oil. Flax-seed poultices soaked in olive-oil are applied to the abdomen. The diet is restricted to very light, easily digested foods. Dr. Terry says the oil treatment relieves the friction of the inflamed tissues and relaxes them during resolution. To prevent a return of the inflammatory process, after the original treatment he gives ½ oz. of olive-oil, followed by a glass of hot water before each meal for several weeks.

The Treatment of Whooping Cough.—G. A. Stephens, M.D., B.Sc. Lond. (*Lancet*, December 3, p. 1,471) in a number of cases syringed the ears night and morning with warm boric "lotion," or water, and painted the meatus with—hydrochlorate of cocaine gr. 23, glycerine 4 drachms, solution of perchloride of mercury m. 20, water to an ounce. "In every case the patient was benifited and the whooping cough was got rid of." He gives notes of eight cases which in a few days entirely lost the bouts.

of whooping cough, though in some bronchitis lasted for several days. His explanation is that the cough is an aural reflex from slight local inflammation of the meatus.

Two Cases of Whooping Cough Treated by Aural Medication.—S. Glanville Morris, M.D. Edin (*Lancet*, December 24, p. 1,702).—The following two cases were treated according to the method recently advanced by Dr. G. A. Stephens in the *Lancet*.

Case 1.—The patient was a boy, aged five years. He had been suffering from whooping-cough for one week. There was a discharge from both ears, very considerable from the left one. The face was puffy. He vomited with the cough, and passed very bad nights. His ears were syringed with warm boric lotion, and the meatus and membrana tympani were painted in accordance with Dr. Stephen's method. The first night the child slept well: the vomiting ceased, and he did not whoop again. By the fifth day the child appeared to be well.

CASE 2.—The patient was a boy, aged 6 years. He had suffered from whooping-cough for one week. The appetite was poor, there was vomiting with the cough, but no pain or discharge from the ears. The ears were syringed and painted. On the next day there was no improvement. The treatment was continued. On the third night the child slept much better and whooped less. By the fifth day he was well.

The Treatment of Earache.—Sprague (*Atlantic Med. Weekly*, August 20, 1898) asks "What is the general practitioner to do in cases of earache?" The pain may indicate (1) otalgia, reflex or local, with no sign of inflammation; (2) otitis media; or (3) otitis externa. The pain is in itself the most important symptom, and the physician must, therefnre, carefully ascertain its character, duration, and location. as well as make a thorough examination of the ear. In otalgia there is no disturbance of hearing and no change in the appearance of the ear or the drum-membrane The pain is reflex in character, and comes usually from carious or uneruped teeth, ulcers in the throat or nasopharynx, tonsilitis, anæmia, neuralgia, hysteria, etc. In otitis media there is almost always deafness from the beginning. There is more or less hyperemia and bulging of the drum-membrane, according to the character of the inflammation —catarrhal or purulent—and the amount of fluid present. The application of heat, either dry or in the form of a douche, accompanied by diaphoresis and a saline cathartic, will abort most cases at an early stage. The instillation of various drugs into the external ear has sometimes a good effect, due apparently to the heat of the fluid instilled. If the drum is much distended it should be incised in its posterior lower quadrant, after the external ear has been thoroughly cleansed and sterilised. After incision the ear may be cleared by a Politzer's bag. But this should not be done unless the nasopharynx has been first cleansed, so that the infectious matter shall not be blown up into the ear. If there is much nasal discharge this had best be omitted. After all discharge has ceased and the membrane has healed, the air-douche should be used for some days to prevent adhesions.

Young children are often unable to localise the pain in earache, and so in all cases of indefinite pain in the head the membrane should be examined. If this were regularly done many serious complications would be avoided. Local measures should be tried for only a few hours, and then if they do not give relief, and the membrane is bulging, it should be incised without further delay. After incision the ear may be irrigated every few hours, according to the character and amount of the discharge, with hot boracic acid or hot bicarbonate of soda solution, and the mastoid region should be watched for signs of extension of the trouble to the cells of this bony process.—*Medical News.*

Loss of Appetite in Children.—Künkler (*Allg. Med. Central Zeit.*, January 4, 1899, p. 1).—Loss of appetite is liable to occur in delicate children and in convalescents from acute diseases. It is often difficult to overcome the dislike of food in such cases. Dr. Künkler recommends the new drug, *orexin tannate*, as a good stimulant of the appetite, and recounts a series of cases showing its good effects. The dose is 0·5 grammes (about 8 grains) two hours or so before meals twice a day. It may be given as powder, being without taste or odour, or in the form of chocolate lozenges. No food or drink, except water, is to be taken between the medicine and the next meal. Several days (5 to 10) may elapse before the effect of the medicine is apparent.

Prolapse of Vaginal and Rectal Mucous Membranes in an Infant with Spina Bifida.—Pérignon, of Sedan (*Journ. de Sc. Med. de Lille*, June 4, 1898), has seen a rare case of congenital vaginal and rectal prolapse. The mother sustained two injuries during pregnancy. There was a sacro-lumbar spina bifida. The lower limbs were quite paralysed. There was double club-foot, valgus on the left side, varus on the right. The anal orifice was gaping, and its mucosa prolapsed, and through the vulvar orifice a cylindrical tumor protruded, which carried on its surface an ulcerated area It was at first thought that this mass was the uterus; but further examination proved it to be the prolapsed vaginal mucous membrane with its characteristic transverse rugæ. The cranial sutures and fontanelles were wide. The infant showed no other malformations, and lived for some weeks. There was difficulty in the evacuation of the bowels, and the fæcal matter was hard. The vaginal prolapse was first noticed on the third day of life. There was also a certain amount of true prolapse of the uterus, the cervix being nearer the vulvar orifice than usual.—*Brit. Med. Jour.*

The Treatment of Dysphagia in Laryngeal Tuberculosis.—Eugene S. Yonge, M.D. (*Brit. Med. Jour.*, October 22, p. 1250).—If ulceration is absent, and discomfort is felt only at meals, a spray of cocaine (5 or 10 per cent.) or a pastille of morphine and cocaine, administered before nourishment is taken, may prove successful.

In mild cases of ulceration injections of menthol and guaiacol have both a soothing and a curative effect. Donelan advocates the submucous injection of guaiacol into the floor of the ulcer, combined with sprays of that drug, as the quickest means of relieving the dysphagia in both mild

and severe cases. Ransome has found a spray of nitrate of silver very soothing after the first irritation has passed off, a film being formed which protects the loss of tissue from further injury. Anti pyrin is said to last longer than cocaine, but in the writer's experience it acts best mixed with cocaine, when he has observed fairly complete anæsthesia to result, lasting in some cases up to 5 hours. It is well known that food in a semi-solid condition is swallowed with greater facility when there is dysphagia than either liquids or solids.

In more distressing conditions of suffering, consuming the food in the position recommended by Wolfenden may be of value; it also tends to prevent coughing on the ingestion of nourishment. A 5 to 10 per cent. solution of cocaine may here again be useful; but sometimes the application itself causes distress, then a sticky mixture of hydrochlorate of morphine, mucilage of tragacanth, glycerine and water, taken in sips before meals, has proved extremely soothing. Iodoform and morphine are very old remedies, and, in certain cases, of value.

As to the recently introduced local anæsthetics. Holocain does not contract the blood vessels or produce cerebral excitement, the taste is less unpleasant than that of cocaine, and given in moderate doses it has not produced any toxic symptoms; its anæsthetic qualities are well marked. Orthoform appears to be the most valuable remedy for the dysphagia of laryngeal tuberculosis. It is strongly anæsthetic, is non-toxic, its effects are lasting, and it is appreciably antiseptic.

Arytenoidectomy and epiglottidectomy have been proposed for the relief of dysphagia when the pain and difficulty in swallowing are such as to bring the patient to the brink of starvation; the writer would prefer to use the œsophageal tube or feed by the rectum.

Hot Water Treatment of Gonorrhœa.—Dr. C. S. Murrell (*Mas. Med. Jour.*) advises prolonged hot water irrigations in both acute and chronic gonorrhœa. A soft catheter is passed to within an inch of the prostatic urethra. It is then connected with a "gravity apparatus" containing warm water, and in which the water is gradually heated. The stream flows through the catheter, and then back between the carther and mucous membrane. Several quarts of hot water are used at a time; some patients having a "tolerance point" as high as 180° to 190° F. The advantages claimed for this method of treatment are;—The course of the disease is shortened by at least two-thirds, making the average of the stoppage of the discharge nearer one week than three. The discharge immediately becomes non-purulent and reduced to a very small quantity. There is absence of chordee and pain on micturating. Stricture as a sequel is improbable. The usual inconveniences of the disease are done away with.

Gastric Troubles in Early Phthisis.—Croner (*Deutsch. Med. Woch.*, December 1, 1898, p. 757).—Dyspeptic symptoms may occur not only in advanced stages of tuberculosis of the lungs, but also among the early manifestations of the disease; indeed, occasionally gastric trouble is the first thing complained of. Observers have arrived at very different

results in examining the condition of the stomach in such early cases, and Dr. Croner gives the results of his own observations. He was unable in his series of cases to find any constant alteration in the secretory or motor function of the stomach. The acidity and peptic power of the gastric juice were practically normal; there was no increase of mucus to suggest gastritis, nor was there discoverable delay in the propulsion of the gastric contents. He does not accept the theories previously advanced, that the dyspepsia of phthisis is due to the fever accompanying the disease, or to the toxines of swallowed tubercle bacilli. He is apparently content to call the condition "functional."

The Significance of Leucocytosis during Digestion.—Marchetti (*La Settimana Medica*, No. 46, November 12, p. 541).—The appearance of an increased number of leucocytes in the blood during digestion has been studied by many observers, and attempts have been made to make use of this phenomenon as a means of diagnosis in diseases of the stomach. It has been contended, for instance, that in cancer of the stomach this leucocytosis never occurs, and that thus a strong confirmation of our suspicions may be obtained in doubtful cases of this disease. Recent researches, however, do not support this view, and the observations of Dr. Marchetti seem fairly conclusive on this point. He examined, altogether 40 patients, suffering from different diseases of the stomach, and found that the existence of leucocytosis after a meal of milk and eggs depended entirely on the digestive activity of the stomach and the consequent absorption of peptones into the circulation. He is thus in agreement with Pohl and Hofman, who had previously arrived at the same conclusion. In cases of cancer the leucocytosis may or may not be present, according to the degree of impairment of peptic capacity. All that can be said is that the presence of this phenomenon is of more weight in excluding the existence of cancer than its absence is in proving the presence of malignant disease.

Death after Mercurial Inunction.—(*Lancet*, Nov. 26. p. 1422).—The medical officer in charge of a workhouse in Belgium has recently been compelled to make his appearance in the law courts. He instituted a routine treatment on the admission of all infirm inmates to free them from vermin. This consisted in the inunction of a compound of two parts of strong mercurial ointment with three parts of vaseline, followed an hour later by a bath. The average quantity of ointment used was a trifle more than a drachm. Out of 630 thus treated 30 got mercurial stomatitis, 17 of these were obliged to remain in their wards, 3 had to be taken into the infirmary, and 1, an old man, aged 67, died a month afterwards. A necropsy was made, and the opinion given, that the mercurial inunction was responsible for the death. The medical officer was charged with manslaughter. Several medical men gave evidence that the treatment was proper. The court found that "it was not proved that the death was due to mercurial poisoning, as it did not take place for a month after the inunction, and there had been periods of improvement, and that though the ointment might have caused the stomatitis,

this became "ulcero-gangrenous," assuming a serious and unexpected character in consequence of organic conditions which induced special morbid phenomena independent of the original cause." A fine of 15 francs was, however, imposed, as the court considered that such heroic measures were not suited to all persons, and that such a strong preparation should not have been ordered indiscriminately or without a medical examination of each person. The judgment, when brought into the Court of Appeal, was not sustained, and the defendant was finally acquitted

Melanoplacia of Mucous Membranes and the Diagnosis of Addison's Disease.—Schultze (*Deutsche Medic. Wochenschrift*, No. 46, p. 725).—Pigmentation of mucous membranes is generally considered diagnostic of Addison's disease, but it seems to be found under other conditions. It appears to occur in some cases as a mere accident without obvious cause: it may also be associated with chronic gastric disease, such as carcinoma; and a similar condition, along with general pigmentation of the skin, was described by Parkes and Harley (*Lancet*, 1858) in a case of cirrhosis of the liver. Professor Schultze describes two cases of abdominal disease, in which this pigmentation was found on the mucosa of the mouth. In the first case the diognosis lay between cirrhosis of the liver and chronic peritonitis: in the second there was cholangitis due to gall-stones, with tubercular disease of the lung and testicles. In neither of them could Addison's disease be absolutely excluded, but the group of symptoms by which it is distinguished did not occur. Nor can the occurrence of this group be relied on as a sure indication of disease of the suprarenal bodies, for the author relates a case in which weakness, anorexia, anæmia, vomiting and diarrhœa were all present, but the autopsy showed only chronic gastric catarrh without any affection of the suprarenals. In this case there was no pigmentation.

Death from Septicæmia through the Bite of an Insect.—(*Lancet*, Oct. 8, p. 967).—On Sept. 27, Mr. George Hart, M.R.C.S., aged 38, died at Bolton from septicæmia and septic pneumonia, the results of an insect bite. He was in his usual health up to about ten days before he died, when he complained of a sharp pain near the right eye, the skin over which afterwards began to swell, and a small pustule to form. He had a rigor followed by extensive cellulitis in the neighborhood of the pustule and the development of pneumonic symptoms. Septicæmia was diagnosed and anti-streptococcic serum was resorted to, together with free incision, but he succumbed.

The Proteus Vulgaris in Acute Gastro-Enteritis Produced by Eating Pork.—J. Campbell M'Clure, M.D. (*Glasgow Medical Journal*, December, p. 431).—A household of eight adults partook of fried pork. Six hours later one man was seized with abdominal pain and diarrhœa, from which after a purgative he recovered. On the next day all suffered from severe diarrhœa, nausea, and vomiting. One of the men died on the following day. The others recovered, but a man and a woman were

very ill and confined to bed for a few days. The pork was described as "American chilled pork," and it was said that previously there had been one or two attacks of diarrhœa after eating it.

A specimen of the fæces was very offensive. It yielded cultures of a bacillus having the characters of proteus vulgaris. This organism has been noticed in several instances in connection with acute gastro-enteritis. Levy (*Archiv. f. exp. Path. u. Pharmak*, Bd 34, 1895), published a case which was one of eighteen which occurred after a meal in a restaurant. At the bottom of the ice chest where the meat was kept was a layer of filth from which pure culture of the proteus were made. Booker says that cholera infantum is in a considerable number of cases due to this organism. Intravenous injection in dogs produces rapidly fatal hæmorrhagic gastro-enteritis.

Formation of Subcutaneous Gummata.—Philippson (*Giorn. Ital. delle Mal. Ven e della Pelle.*, 1898, Fasc. iv. p. 409).—According to Dr. Philippson the formation of subcutaneous gummata is determined by the occurrence of proliferation of the endothelial lining of a vein (endophlebitis obliterans) and consequent thrombosis. An accumulation of round cells takes place around this obstructed vessel forming a "Granuloma," and the central portion of the mass soon undergoes "coagulation necrosis" and dies. This dead tissue acts as a foreign body, and quantities of leucocytes accumulate and penetrate the mass; ulceration of the overlying skin takes place and the well-known syphilitic ulcers are formed. The writer describes peculiar changes in the fat cells of the subcutaneous tissue, not previously recognised, by which the fat is broken up into droplets and absorbed, while the cell body is converted into one of the large giant cells found in syphilitic, as in tubercular, lesions. He considers that the vascular thrombosis is the primary cause of the formation of a gumma, but differs from other writers on syphilis in that he finds that the veins rather than the arteries are the main seat of the morbid process.

Mucous Patches on the Posterior Pharyngeal Wall.—Bergeat *Münchener med. Wochenschrift*, November 22, 1898) has seen two or three cases of syphilitic mucous patches situated on the posterior wall of the pharynx, and describes one in detail. There were five parallel *plaques* running vertically in wavy lines. They were of the typical bright grey colour and raised slightly above the surface of the pharynx, which elsewhere was a deep red. Their upper limit could only be seen by posterior rhinoscopy; below they terminated opposite the epiglottis. The writer was able to compare these patches with undoubtedly syphilitic *plaques* on the soft palate in another case, and to note their exact resemblance. No history of infection could be obtained, and there were no other symptoms of syphilis, but they disappeared under mercurial treatment in a fortnight. Possibly *plaques* in this position often escape diagnosis owing to their remarkable resemblance to streams of mucous running down from the posterior nares. Still, they must be very rare, since, though they are mentioned by Lewin, Schech states in his textbook (3rd Ed. 1890) that

he has seen them but once (Bergeat quotes him wrongly as, like Zeissl, never having met with them), and Moritz Schmidt does not refer to the subject.

Salol in Pleurisy.—Jegorof (*Nouv. Rem.*, xiv., 238, after *Vratch*) finds that salol in doses of 12 to 42 gm. is of great service in cases of pleurisy, increasing the diuresis and promoting the absorption of the effusion, without producing any of the ill effects previously observed from alkaline salicylates, such as digestive derangements, palpitation, and dyspnœa, which have been so generally followed in these cases as to lead many authorities to interdict the use of these salts.

THERAPEUTICS.

The Use of Morphia in Heart Disease.—F. S. Toogood, M.D., Lond. (*Lancet*, November 26, p. 1898).—In those distressing cases of heart disease (mainly of mitral incompetence) where digitalis and its allies, strophanthus and convallaria, appear only to excite persistent vomiting and where the stomach retains practically nothing, where the heart is extremely irritable and irregular in rhythm and the pulse in volume, where intolerable from exhaustion and insomnia, and where there may also be often an ever-present dyspnœa renders the condition of the patient œdema from a failing circulation and scanty albuminous urine, the writer has seen the hypodermic injection of morphia effect the most gratifying results. The pulse has become steady, strong, and regular, the œdema has disappeared, the dyspnœa has been relieved, and the urine, instead of being scanty, and containing albumin, has become normal in amount and character, and the albumin has become much less or has entirely disappeared.

A man, aged 50, had been confined to his bed for two months. He was suffering from urgent dyspnœa, which had prevented sleep for many days. His legs were œdematous, and his urine was scanty, loaded with urates, and it contained one-tenth albumin. His pulse was 120, small, easily compressible, and irregular in time and volume. His heart was enlarged, the apex beat being in the sixth space one inch outside the nipple line. There was a systolic aortic murmur. Every drug which had ever been suggested as of use in cardiac cases had been tried, and had proved of no avail. Hypodermic injections of ¼ gr. of tartrate of morphia produced a marked effect from the first. He slept quietly and comfortably, the heart came down to 80, the urine increased to 70 ozs., the albumin cleared up, and the œdema disappeared. He became free from dyspepsia, except slight paroxysmal attacks, when the effect of an injection was wearing off. He gradually improved and resumed his occupation.

In a case of aortic regurgitation, anginal pain and dyspnœa, which did not yield to liquor glonoini or amyl nitrite, were relieved by 10 minims of liquor morphiæ and 1½ minims of liquor atropiæ every four hours.

A woman, aged 24, had mitral regurgitation without evidence of hypertrophy or dilatation The action of the heart was quick and irregular; 5 minims of tincture of digitalus were ordered, and she improved slightly. Her condition then became alarming. The action of the heart became tumultuous, there was great pain, and a presystolic murmur developed. The pulse was almost imperceptible, and she was apparently dying. Only 16 ozs. of urine was passed in the 24 hours, and there was incessant vomiting. The digitatis was omitted, and ¼ gr. of morphia was injected hypodermically every 12 hours, she slept soundly, which she had not done for several days. She immediately began to improve; the vomiting ceased, the urine became normal in amount, and the tumultuous action of the heart subsided, and she recovered.

The Treatment of Neuralgia and Rheumatism by Currents of Hot Air.—W. R. Taylor, M.D., F.R.C.P., Ed. (*Lancet*, November 26, p. 1,385) has invented an apparatus for this purpose. It consists of two glass tubes one within the other connected with a chamber containing a fan. The air is heated by passing an electric current through a wire coiled on the inner tube. The fan revolves at a rapid rate and sends through the tubes a current of air which in its transit becomes heated and leaves the mouth of the outer tube in a condition suitable for direct application to the affected part. Intermediate between the source of electricity and this apparatus is placed a lampholder supplied with lamps of such calibre as to interpose a suitable resistance to the electric current. By means of these the temperature of the heated air can be suitably regulated. (If the voltage be from 100 to 130, as in many parts of London, two 16 candle lamps may be introduced into the circuit. If the voltage be 230, as in Edinburgh, two 32 candle lamps may be used.)

The movement of the air whether hot or cold is an important factor in the effects. Thus a beafsteak can be cooked in 33 minutes in a still temperature of 260°, but if the air be blown on the meat by bellows it can be cooked in 13 minutes.

In treating neuralgia Dr. Taylor often finds thermal anæsthesia present; blisters may result. A woman, aged 22, who had suffered from facial neuralgia for 13 months, was cured. Toothache was also cured by five minutes' application. For the treatment of lumbago, torticollis and painful affections of the knee joint and other large surface, he uses a much larger apparatus. In this the air is blown in a much stronger current. The glass tube is from 14 to 18 in. long and 1¼ in. in diameter. It is adapted for the full voltage of the electric supply without the intervention of resistance lamps, and is effective in these diseases as well as in those cases of herpes which are accompanied and followed by persistent pain.

A Case of Hæmophilia Treated by Inhalation of Oxygen.—Mr. W. H. Brown (*Lancet*, December 3, p. 1474).—A boy, aged 13, was admitted into the General Infirmary, Leeds, on November 6, 1897, with a large swelling on the outer side of the right thigh. A fortnight before he had "sprained" his thigh whilst getting into bed. He had six brothers who, according to the mother, all died from bleeding. His

maternal uncle died from bleeding from the stomach. A maternal aunt had a son who died at the age of 14 years from bleeding. The patient had had many swellings in his joints following slight injuries. He had bled from the gums and nose many times. He had been an in-patient on three former occasions—namely, in 1894 for bleeding from the roof of the mouth following a prick with a pin, in 1896 for bleeding from the gums after a fall, and early in 1897 for hæmorrhage into the knee-joint from a slight accident. He was a fairly well-grown boy, but very anæmic. On the outer side of the right thigh there was a large tender, fluctuating swelling; the skin was red and very thin. As it seemed not unlikely that the skin would give way about 4 oz. of bloody fluid were withdrawn by aspiration. During the next three weeks the aspirator was used several times, but the swelling refilled. A small incision was made, and a quantity of clot and some purulent fluid escaped. Firm dressings were applied, but they quickly became soaked through, and the oozing kept on in spite of packing and pressure, and the administration of astringents. The boy grew rapidly weaker, his digestive powers failed, and vomiting was continuous. Bleeding from the nose and gums took place. The pulse was about 140, and the temperature was subnormal. As ordinary treatment seemed useless, it was decided to try the inhalation of oxygen. This was given in large doses, and within twenty-four hours the vomiting and bleeding had ceased, and the boy was able to take milk freely. The inhalation was continued for a week, and no medicine was given. The wound healed, and the boy recovered.

Treatment of Erysipelas with Metacresol-Anytol. — Koelzer (*Deutsche Med. Wochenschrift.* No 43, October 27, p. 677).—The principles anytin and anytol are derivatives of ichthyol: the substance called metacresol-anytol consists of 40 per cent. of metacresol with 60 per cent. of a 33⅓ per cent. watery solution of anytol. A 1 to 3 per cent solution of this mixture is employed. Experiments on animals showed the value of this remedy in erysipelatous inflammations, and the author records five cases in which it was used on patients suffering from erysipelas. Excellent results were obtained, a cure resulting in every case but one; and even in this a considerable improvement occurred. The method of application was by painting the solution over and around the affected area, the applications being made for 10 minutes at a time at intervals of two hours.

The Treatment of Articular Rheumatism by Heat. — Wilms (*Deutsche med. Wochenschrift*, No. 23, 1898) has devised a simple apparatus for the continuous application of heat to joints, which in principle resembles Leiter's tubes. Flexible metal tubes are coiled several times round the joint, a thin layer of plaster of Paris being first applied to protect the skin. A constant stream of water, at 175° to 195° Fahr., is maintained through the coil by syphon action. In practice the water is used as hot as it can be borne. The writer has had very good results with this method of treatment in cases of chronic articular rheumatism. In gonorrhœal rheumatism especially, the cure was completed in a shorter time and with less restriction of movement than with other methods.

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How to Treat a Cough

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"The object of this brief paper is not to try to teach my colleagues how to treat a cough, but simply to state how I do it, what good results I get, and to call their attention to those lighter affections of the throat and chest the principal symptom of which is an annoying cough, for which alone we are often consulted. The patient may fear an approaching pneumonia, or be anxious because of a bad family history, or the cough may cause loss of sleep and detention from business. What shall we do for these coughs? It has been my custom for some time to treat each of the conditions after this general plan: If constipation is present, which is generally the case, I find that small doses of calomel and soda open the bowels freely, and if they do not, I follow them with a saline purgative; then I give the following:

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EDITORIAL.

THE BACTERIAL SYSTEM OF SEWAGE DISPOSAL.

In the purification and disposal of sewage, a most important branch of preventive medicine, science has not lagged much behind other branches of medicine, even surgery. The bacterial system of purification now seems to have practically disposed of this long unsettled and troublesome question. It may be made applicable to large cities as well as to smaller towns and country residences.

The purification is all accomplished by bacterial action. The first process, that of complete liquification of the sewage, is most simply accomplished by anaërobic bacteria, in what is termed the "septic tank." The tank is made, preferably, long and shallow, and of such capacity as to hold a twenty-four hours' outflow of sewage. It is tightly covered to exclude air and sunlight as far as possible, and it is not allowed to get full.

The solids of the sewage, after this has entered the still water of the tank, below the surface, are in a measure set free, some floating, some sinking to the bottom of the tank, according to their specific gravity. All are at once attacked by the micro-organisms present and are soon dissolved, the heavier particles settling to the bottom. A sort of leathery scum is formed on the top of the sewage. Gaseous bubbles are formed from the organic particles at the bottom of the tank, which rise, carrying up solid particles, squeeze through this thin scum and soon burst, under the cover of the tank. The solids so carried up being thus set free, settle to the bottom again, and the air-bubble process is repeated until the whole of the organic matter has been disposed of, and all that remains is inorganic ash at the bottom of the tank, on which bacteria cannot feed.

The liquified sewage, practically clear and greatly purified, flows out gradually, as it is allowed to flow in, but at the opposite end of the tank. It may be turned into a stream or lake, or may be further purified by being allowed to flow in thin sheets over flat surfaces as it issues from the tank; or by land irrigation.

Another good plan is by upward filtration of the sewage through "cultivation filters," consisting of coke or gravel, giving a large surface to the air. In this, the purification is accomplished by aërobic bacteria, which require oxygen for their work. The sewage in this way is purified to about the same degree as in the septic tank.

PATHOGENIC BACTERIA AND AUTO-INTOXICATION.

The bacterial origin of many diseases is now generally recognized as not any longer a theory but an established fact. Yet a few high authorities hesitate to accept it as such; that is, as the origin of the diseases. As in the beginning Ziemssen said in respect to the tubercle bacillus,—"Various points in the subject of tuberculosis seemed, from the standpoint of the bacillus theory, to be beset by almost insuperable difficulties" (Clinical Lect., Doherty's Trans.).

In no disease probably has the bacterial origin been more generally accepted than in that of enteric fever, in which Eberths bacillus is regarded as the cause. For a long time it was contended by high authorities that this bacillus was nothing more than the usually benign bacillus coli communis transformed into a virulent pathogene by its environment. Eventually Klein and others appeared to set this at rest by showing apparently distinct and permanent differences. Now, Dr. McWeeney, at the Royal Academy of Medicine, Ireland (*Brit. Med. Jr.*, Feb. 11, '99), describes the "peculiar behavior of a strain of typhoid bacilli which he had isolated by the usual methods from the bile of a fatal case of typhoid," present there in great numbers. It had the cultural characters of Eberths bacillus, but with the distinctive peculiarities of extreme slowness of growth on gelatine plates, with fewness, delicacy and shortness of flagella. Although it was actively mobile during the first twelve hours, "it died down by the end of twenty-four hours to a waggling movement hardly distinguishable from the bacillus coli." Tested side by side with several typhical cases "it proved markedly resistant against agglutinating influences." These two races of undoubted typhoid bacilli, Dr. McWheeney states, "gave directly opposite serum-diagnostic results."

At a meeting last month of the London Pathological Society (*Brit. Med. Jr.*, Feb. 20) on the subject of Pseudo-Tuberculosis, Dr. G. Sims Woodhead, who introduced the subject, said,—"In compartively recent times we had passed from an anatomical pseudo-tuberculosis to a pseudo-tuberculosis bacillus." A "serious question," he said, had come up by the discovery of Frau Rabinowitch in milk, cream and butter, of a bacillus which morphologically and in its staining reactions, but in little else, was identical with the tubercle bacillus." There were two positions from which it was absolutely necessary to extricate ourselves: On the one hand, pseudo-bacilli which had the morphological and staining characters of the true tubercle bacillus, but which pathologically, appeared to be widely separated from it (why, if not by the condition of its "host" ?); on the other hand, there were a whole series of lesions which presented certain superficial resemblances to tubercle, yet with certain specific differences, which, most important of all, were not induced by the action of tubercle bacilli. The protean forms of tubercle made it difficult to describe any single form as typical. They varied at different stages and under different conditions. And almost every new tissue, at some period of its development, might be said to be like some stage of a tuberculosis process.

Professor Sidney Martin mentioned the well known case of Flaxner, of the Johns Hopkins Hospital, in which in a negro aged 70 years, there were areas of consolidated nodules in the lungs, some of which were calcified. There was too, in this case, nodular disease of the perineum, indistinguishable from tubercle in its general characteristics. But there were no tubercle bacilli; inoculations gave only negative results.

Dr. Washbourn said there were many organisms of a widely different character which produced similar anatomical lesions to those produced by the tubercle bacillus. He mentioned several of these: one, the bacillus pseudo-tuberculosis liquefaciens, causing tubercles in the human peritoneum, and in mice. A form of mould, the aspergillus, had been described, he said, as causing a tuberculosis lesion in the human lung.

On the other hand, a number of cases have been recorded of the presence of tubercle bacilli in considerable numbers in the air passages with no indications of tuberculous lesions, or indeed of any other diseased condition.

Farquharson says (Ptomaines and Other Animal Alkaloids),—"The relations of bacteria to diseases are not sufficiently well defined to exclude the possibility that even pathogenic microbes are not the primary cause of

certain affections, but that antecedent changes have been in operation in the organism, and that these constitute the first step toward the disease, developing conditions necessary to the growth of the bacteria."

Jacourd (*Brit. Med. Jr.*, Feb. 20, '97) divides "microbial diseases" into two distinct classes: those which are of extrinsic origin; and those of intrinsic origin, because the microbes may exist in a healthy living organism without injury to the latter, "becoming noxious only in consequence of changes undergone in the organism itself." And, "in almost all diseases morbid autogenesis by changes in the organism itself is the rule.

In view of these facts; of the great deal we yet have to learn in respect to bacteriology; and of the known effects of auto-intoxication, faith in the bacterial *origin* of diseases may be naturally enough shaken. And it is perhaps not surprising that we occasionally see items and articles on the "passing of the bacillus."

The Prophylaxis of Puerperal Fever. — Starzewski (*Prezeglad Lekarski*, Nos. 25 and 26, 1898) investigated the action of Marmorek's anti-streptococcus serum in preventing rises of temperature during the puerperium in Prof. Cyzewicz's clinic in Lemberg. 288 women received consecutive numbers on admission. Those with odd numbers received no injection, the first 56 of the even numbers were given an injection of 5 grammes, and the rest (88) 10 grammes of serum directly after being delivered. They were all under observation for 12 days, and every rise of temperature above 99°.5F. was noted. The following results were obtained:—The temperature was raised in 17.36 per cent. of those who received no injections; in 7.14 per cent. of those who received 5 grammes; in 5.68 per cent. in those who received 10 grammes of serum. It was also observed that jaundice was less frequent in the children of those women who had had injections.

Fever from Coitus during the Puerperium.—Dr. Frances H. Lee (*Woman's Medical Journal*, August, 1898; *Medicine*, November) reports the case of a quintipara in whom each confinement had been followed by chills and fever about the fifth day. In the confinement for which Dr. Lee attended the patient the temperature and pulse were normal until the fifth day, when the patient began to have chills in the morning. The temperature was 103°.5F., the expression anxious, abdomen slightly distended and tender, and the patient complained of headache. On enquiry it was ascertained that the patient had had coitus on the night of the third and the morning and night of the fourth day—thrice in thirty-six hours. Interdiction of coitus reduced the temperature, and the patient recovered. It was found that coitus had taken place on the third and fourth days after each confinement, and that the chills and fever followed.

EPITOME OF CURRENT LITERATURE.

SURGERY.

Aneurysm of the Common Carotid Treated by Ligature and Extirpation of the Sac: Recovery.—De Castro y Latore (*La Correspondencia Medica, Madrid.* November 8, 1898, p. 327.)—The patient was a lady, 24 years of age, who suffered from an aneurysm of the left common carotid artery as the result of a fall. Treatment by pressure and rest had been tried successfully, and symptoms of dyspnœa and nausea were complained of. When she came for treatment the tumour, which had recently much increased in size, was situated in the left carotid region, and measured 3 centimetres in length. It was intensely painful on the slightest pressure, which also produced dyspnœa, pallor and nausea. Pulsation in the facial and temporal arteries on the affected side was much diminished. At the operation chloroform was used as the anæsthetic. Skin, platysma, and cervical fascia were in turn divided, and the tumour exposed. It was livid red in color, and was crossed at its lower extremity by the omohyoid muscle. Silk ligatures were passed both above and below the sac at distances of 1 centimetre. Extirpation of the sac was rendered somewhat difficult by reason of adhesions to the vagus nerve and other neighboring structures, but was successfully carried out. No cerebral symptoms occurred after the operation, and the coldness complained of on the side of the face had passed off by the fifth day. Slight giddiness was experienced by the patient on first attempts at assuming an erect position, but passed off under the influence of coffee. On the sixth day the patient was able to take driving exercise, and convolescence proceeded without incident. The nausea and dyspnæa from which she had suffered were no doubt due to implication of the trunk of the vagus in the adhesions formed around the aneurysm. Dr. Castro y Latorre has performed the operation of ligature upon the carotid arteries seven times in all, and states as the result of his experience, that in chronic cases, such as aneurysm, there is little or no danger of cerebral complications. On the other hand, in emergency operations for wounds of vessels, the danger is considerable. He advised that in the case of aneurysms operation should be postponed as long as possible, and some pressure made over the tumor, in order that the collateral circulation may be fully established before the artery is ligatured. In this way the risk of evil consequences is very much diminished.

Rupture of the Gall Bladder.—Editorial (LANCET, December 31, p. 1773).—Rupture of the gall bladder, unassociated with injury to the liver, is rare, and, in a case recorded by Dr. J. M. H. Martin, of Blackburn, in which rupture of the gall bladder occurred in a boy, aged nine years, who was run over by a heavy cart, distension of the abdomen followed, and though no jaundice was present, the stools were clay-coloured. On opening the abdomen it was found that a large quantity of bile-stained fluid was free in the peritoneal cavity; five pints of this fluid were evacuated and a drainage tube was inserted. Complete recovery followed.

Death Caused by Swallowing Needles. — Philippi (*Münchener Med. Wochenschrift*, November 1, 1898), was consulted by an unmarried Jewish woman, aged 22, for chlorosis. Two months afterwards she complained of constant gastric pain extending into the right hypochondrium, and a gastric ulcer was diagnosed. Two months later a periodical abscess formed, and ten days after incising it, a sewing needle was removed from its cavity. This was followed by abscesses, which appeared (1) on the right side of the abdominal parietes, containing fully 1¾ pints of pus; (2) below the umbilitus ; and (3) over the right iliac bone. A long rusty broken needle was removed from the bottom of the sinus left after opening the large abdominal abscess, three months after the first incision, a third, rusty darning needle three inches long, worked its way through the skin in the splenic region, and a fourth was removed through an incision in the left hypochondrium.

The girl was under the writer's observation from February 20, 1892, to April 16, 1895, and the first needle was discovered in the perirectal abscess on June 19, 1892. She died a few months after Philippi had saw her of inanition and exhaustion. During the whole time she was often in great pain, and morphine was injected ; she always suffered from great tympanites and constipation, and her whole appearance gave the impression of hysteria. She would give no explanation of how the needles came to be in her body, and declared that though she had once swallowed one by mistake, she had found it again in the stools. The writer thinks there can be no doubt that the needles were introduced by the mouth, and intentionally, the girl being hysterical. The only other tenable hypothesis, besides hysteria, is that she took them with suicidal intent, and was afterwards afraid to acknowledge it.

Obstruction of the Pylorus Diagnosed by the Rontgen Rays.— Drs. Boas and Dorn (*Elec. Rev.*, August 17) report that they have found that if an ordinary gelatine capsule filled with metallic bismuth is swallowed, its course through the alimentary canal may be outlined by the Röntgen rays. In cases of obstruction, the capsule, is arrested. They have made this observation by tests on 14 patients, and recommend it as an excellent means of diagnosis.—*Amer. X-Ray Journal.*

Local Anæsthesia by Rendering the Tissues Bloodless.—Oberst induces local anæsthesia by the combination of cocaine in small amount and the elastic tourniquet. Dr. Kofmann, of Odessa (*Centralbl. f. chir.*, Leipzig, October 8, 1898) has tried the effect of rendering the tissues bloodless without the addition of cocaine. The tourniquet was applied round the upper arm in a case of ganglion. When the skin had been sterilised the hand was of a death-like pallor and insensitive to touch or pain. The ganglion was dissected out without the patient's knowledge. She complained only of the pain caused by the tourniquet. The second patient was a woman with a needle embedded in the hand ; a deliberate dissection was carried out with a like freedom from pain. A series of cases of abscess, whitlow, etc., were treated with similar success. If the patients could not see they did not even know when the operation com-

menced. Complete anæsthesia depends on the thoroughness of the elastic constriction of the vessels, and on a sufficient interval being allowed to elapse after the application of the tourniquet. In operating on the fingers or toes, the writer has found it better to apply the constrictor above the wrist or ankle as he has seen gangrene from applying it to the base of the finger or toe. He regards his method as an improvement on Oberst's, as it obviates the pain of injecting the cocaine, and the risk of poisoning. It is applicable to any operation below the elbow or knee. For the thigh, upper arm, trunk, and head, he employs Schleich's method of local anæsthesia, and has reduced the use of general anæsthetics to a minimum.—*Edinburgh Med. Jour.*

Removal of Large Portions of Intestine. — Editorial (*Lancet*, December 31, p. 1773),—Mr. Frederick Treves has published a case in which the tolerance shown by the human body to the removal of large portions of the alimentary canal was strikingly manifested. A little girl, 6 years of age, had been the subject of idiopathic dilatation of the colon from birth, and the interference with the onward passage of fæces was so great that Mr. Treves made an artificial anus, and 9 months later he removed the whole of the descending colon, sigmoid flexure, and rectum, and brought the end of the transverse colon down to the anus, where it was secured. The child made a speedy and excellent recovery. Another interesting case in which much large intestine was removed was that of a woman, 33 years of age, from whom Mr. R. Lawford Knaggs successfully removed the cæcum and the ascending and transverse colon for malignant disease of the colon extending from the ileo-cæcal valve to the splenic flexure.

The Radical Cure of Reducible Hernia by Kocher's Method of Invagination, with Lateral Displacement of the Neck of the Sac.—By J. Lynn Thomas, F.R.C.S. The method described in Kocher's *Operative Surgery* (English translation by Stiles) is fairly well known and is gaining in popularity; the surgeon who has practised it will appreciate the advantages of the modification. There was a potential peritoneal sheath or pouch in the displaced neck in the older method, but in the present there is none.

The hernial sac is separated in the usual manner; the free end of the hernial sac is taken hold of by the long curved forceps used in Kocher's operation and the sac invaginated upon itself into the general peritoneal cavity, carrying the point of the forceps along the anterior abdominal wall until it is nearly opposite the anterior superior iliac spine of the same side. The point of the forceps is now pushed against the abdominal wall and a small incision made through the abdominal muscles down upon it, then the forceps carrying the hernial sac is pushed outwards, the sac is caught and pulled out through the wound after liberating the herniating forceps. The sac is made quite taut, its neck is secured to the parietal peritoneum and transversalis fascia and the remainder is cut off. A suture closes the wound in the muscles.

The hernial sac, it will be observed, is turned outside in, and it is its peritoneal lining that is seen at the extrusion through the abdominal muscles.

The same condition is obtained by Macewen by his well-known method of folding the hernia sac upon itself like a fire-cracker: Kocher's method is much simpler, and leaves nothing to give rise to a possible necrosis such as Macewen's pad has been known to do. Kocher's method can be adapted to any hernia with a separable sac, and probably it will in time be the only method for the radical cure of femoral hernia. The essentially new point in its application to an inguinal hernia is the displacement of the neck of the hernial sac *internally* to the internal abdominal ring, instead of *externally* to its outer border (older method); the closure of the inguinal canal is the same as formerly, and the dressings of the wound are confined to a strip of gauze kept on by collodion.

Four months ago, Mr. Thomas operated upon a large double inguinal hernia by the above method. Sixteen days later the patient walked a quarter of a mile without any external hernia support, and at present the scar is as linear as if the patient had been in bed all the time or had worn a light (useless ?) truss.

Incision of the Prepuce as a Substitute for Circumcision.—Current literature is the proper subject matter of the "REVIEW" but we shall always be pleased to summarise articles which though not recent are of value, and not likely to come under the general notice of the profession. Prof. Jas. M. Holloway, of the Louisville Medical College, has kindly forwarded by request a paper on the treatment of phimosis, published in the *Louisville Medical Monthly*, March, 1894. The important point is the substitution for circumcision of a simpler operation—incision of the prepuce. He performs circumcision only exceptionally, when the redundency of the prepuce is extreme. The incision is performed dorsally with a grooved director and scissors or bistoury. When preputial adhesions do not obstruct scissors alone may be used. When they are firm the skin is incised with the knife and the mucous membrane is cut with the scissors as it is stripped away from the glans. The frænum is untouched, and the slight hæmorrhage easily checked. Sutures are not always necessary, but should be employed at the angle of the incision when gaping occurs, and at either corner when oozing does not cease promptly. In children chloroform was the anæsthetic, in adults cocaine (8 per cent. solution), and was injected in the track of the proposed incision.

The result is exactly the same as from circumcision. The redundant tissue gradually shrivels. After a time it is difficult to say which operation has been done.

Œsophageal Stricture Cured by Retrograde Dilatation.—Roemheld, of Vierordt's clinic (*Münchener Med. Wochenschrift*, November 15, 1898) reports the case of a boy, aged 4 years, who was admitted into hospital owing to an impermeable stricture of the œsophagus, which had formed since swallowing a solution of caustic soda six months before.

He was able to swallow liquids, but vomited immediately even soft solids, and was wasted to a skeleton. On attempting to pass the œsophageal bougie, it came upon a resistance, impassable even for the smallest size, 8 inches from the alveolar margin, and therefore just above the cardiac opening. The boy's general condition improved on liquid diet, but all attempts at dilating the stricture from the mouth failed, partly because they brought on attacks of vomiting lasting several days, partly on account of the child's intractability. Prof. Vierordt, therefore, decided on gastrostomy, which was carried out by Prof. Lossen. Some months later a fine bougie was successfully passed through the stricture from the gastric fistula, and eventually this was done every day. When the stricture had become more easily permeable, and the boy less unruly, a specially constructed conical dilator was fastened to the lower end of the bougie. Traction was made on the upper end, which had been passed up through the mouth, by which means the dilator entered the stricture further every day, until at last it could be drawn through it. The procedure was then reversed, the dilator being passed by the mouth and traction made from the gastric fistula. After the stricture had been dilated up to the normal size of the œsophagus at that age, Lossen closed the gastrostomy wound, and the patient was discharged cured 2½ years after admission, though it is proposed still to pass the bougie at intervals. Hacker's method of leaving a permanent œsophageal catheter in the stricture was rejected as being impossible with an unruly child.

The reported cases of œsophageal stricture cured by retrograde dilatation are few, and apply mostly to adults.

OBSTETRICS.

Hypodermic Injections of Saline Solution in Eclampsia.—Poucet and Vinay (*Sem. Méd.*, June 1, 1898).--A woman in the sixth month of pregnancy had eclampsia; her general condition was extremely serious. There were complete coma, suppression of urine, high temperature, etc. Abortion was produced, the fœtus was born dead; 5¼ pints normal saline solution were injected hypodermically, and recovery was rapid and complete.

A New Device for the Arrest of Post-Partum Hæmorrhage.—Arndt (*Münchener Med. Wochenschrift*, No. 43, 1898, p. 1390) proposes a new treatment for atonic uterine hæmorrhage. Though deaths from post-partum flooding are not so common as formerly, now that the manual expression of the placenta has been limited to suitable cases, Dührssen's statement that in Prussia alone there is probably one death a day from this cause, shows the need of a reliable method of treatment. Dührssen's tamponade is valuable, but is not without danger.

Arndt's treatment consists in seizing the flaccid lips of the os with one or two bullet-forceps, and forcibly but slowly drawing the uterus downwards as far as possible. This is repeated three or four times, until all hæmorrhage has ceased, and the uterus is firmly contracted.

This mechanical device acts, firstly, by rendering the uterus anæmic. This has long been known to operating gynæcologists. Winter, Hegar, and others have proved that panhysterectomy, of even the gravid uterus. for cancer can be performed without danger from hæmorrhage if this precaution is taken. Secondly, it not only arrests bleeding at once, but stimulates the uterus to contract, and prevents its further relaxation; partly by the irritation of the automatic ganglia in the middle layer of the uterus, and by stretching the uterine nerves in the broad ligament, partly because anæmia of the uterus is one of the strongest stimili to contraction.

The great advantages of the method are its certainty, simplicity. and—with the most elementary precautions—avoidance of sepsis.

Post-Partum Hæmorrhage Treated by Rectal Injection.—F. de Jersey, M.B., Ch.B. (*Lancet*, December 17, p. 1628), was called to a woman 1½ hours after the birth of her thirteenth child. She was utterly collapsed and blanched, and the pulse was imperceptible. The placenta had not come away. Two pints of hot saline solution were injected into the rectum. In a few minutes the pulse returned. The placenta was removed under chloroform anæsthesia.

We have published another article on the value of saline injections in severe hæmorrhages and in puerperal convulsions ("REVIEW," p. 30, Vol. I., and p. 2, this Vol.). Intravenous or subcutaneous injection is usually recommended. But it has always seemed to us that for the emergencies of general practice rectal injection was far the best method. No special instruments are required. The theoretical advantage that intravenous injection acts more rapidly than rectal is more than neutralised by the greater time required in preparing for and performing the former operation.

Embolism Following Placenta Prævia. — Zorn (*München med. Wchnschr.*, 1898, No. 18).—A multipara had placenta prævia. Podalic version was performed after perforation of the placenta. The operation was performed without much loss of blood, and she rallied well, but symptoms of collapse appeared three hours after delivery. She improved after the administration of stimulants, but the collapse reappeared twice at short intervals, and she died after four hours.

The necropsy showed considerable quantity of air in the uterine vessels and the right side of the heart.

The writer found only five cases recorded.

Severe Flooding in New-Born Children.—Doléris (*Bull. et Mém. de la Soc. Obstèt. de Paris.* May 12, 1898) records a kind of epidemic of this affection in the Hôpital Boucicaut. Five new-born infants were seized with bleeding from the vulva, as well as hæmorrhages from other parts, especially the naval and skin. There was great debility without fever. 3 died, 1 was lost sight of, 1 only recovered. All the mothers were healthy, suckled the patients, and had not sore nipples. The cause could not be found. The patients were washed in running warm water, with sterilized wool, under the superintendence of the midwives. The

discussion did not bring to light any positive results. Bar had observed 15 or 16 cases in Paris hospitals. These were mostly, he declared, due to infection. Loviot was of the same opinion; he noticed that the breasts of the mother or the umbilicus of the patient might be at fault. Charpentier had seen milder cases, where three or four attacks precisely resembling flooding or menorrhagia occurred in new-born female infants, recovery following. In two well-nourished male infants severe intestinal hæmorrhages occurred, but both recovered.—*Brit. Med. Jour.*

Acute Œdema of the Cervix of the Gravid Uterus. — Martha Sommer (*Correspondenz-Blatt f. Schwiez. Aertze*, November 1) reports an example of this complication. A woman aged 25, pregnant for the third time, and about at term, experienced pain over the sacrum and tenesmus after lifting a weight. Suddenly a swelling appeared outside the vulva with some red discharge. There was a dark red elongated tumour (about 4 inches long), with a smooth, easily-bleeding surface, projecting from the vulva. It was flattened antero-posteriorly, and had a narrow neck at the introitus vaginæ. *Per vaginam* it could be made out to be continuous with the anterior lip of the cervix. The buttocks were elevated, and the tumour wrapped in cotton wool. Next morning it had vanished, though *per vaginam* the anterior lip was still soft and swollen. Ten days later labour commenced, and turning was necessary for an arm presentation with prolapsed funis. Some weeks later the uterus and cervix were normal. The diagnosis of this condition is often difficult. In this case, if it had not been for a previous examination some months before, when no abnormality was found, the writer would have taken it for a chronically hypertrophied anterior lip of the cervix with secondary œdema due to pregnancy. Such swellings suddenly appearing during labour have been mistaken for the placenta, for large polypi, inversio vaginæ, or (when the whole cervix is œdematous) prolapsus uteri.

The prognosis is good. The treatment consists in rest in the dorsal position. The etiology is obscure. Geyl attributes it to an unknown vaginal bacillus. At any rate, it is not due to pressure of the fœtus as in chronic œdema, since it has been observed in an early stage of pregnancy before any great pressure could arise, and in the above case the pelvis was particularly large and the presentation oblique, so that pressure by the fœtal head on the anterior lip was out of the question.—*Brit. Med. Jour.*

Continued Irrigation of the Uterus in Acute Puerperal Septic Metritis.—Horace Manseau (*Montreal Med. Jour.*, July, 1898), reports seven cases of acute puerperal septic metritis which were treated successfully by continued irrigation of the uterus, and holds that this method of treatment, preferably preceded by curettage, if persisted in, may prevent recourse to the severe operation of hysterectomy.

His method is shown in the following case. The patient on the fourth day had a rigor; temperature 103°.5; pulse 126. Vaginal and intrauterine douching proved ineffectual. The temperature on the fifth day was 104°.5, pulse 135. On sixth day, continued irrigation with sterilised

water, was begun and continued for twelve hours at the rate of about seven or eight gallons per hour. On seventh day the temperature was 100°, pulse 115, and general condition improved. Irrigation was stopped, the temperature rose higher than ever. On eighth day irrigation was resumed, and maintained for twenty-four hours; temperature fell to 99°5. the midwife stopped the irrigation, and on the tenth day the temperature was 106°.5, the pulse was 180. The patient had several rigors, was delirious and had tympanites. Irrigation was resumed; seven to twelve gallons of water per hour being passed into the uterus for forty hours, with four intermissions of an hour each; the temperature fell to 100°. Even during the intervals the temperature rose, and on the twelfth day after a few hours there was a slight rigor, and the temderature rose to 101°. Irrigation was again commenced, and kept up for three days, with intermissions of not over three hours, when convalescence was established. Over 2,200 gallons of water were passed into the uterine cavity in ten days. The recovery in this case is the more remarkable, as pneumonia developed on the tenth day.—*Edinburgh Med. Jour.*

Tubal Fœtation.—Mandl and Schmit (*Archiv. f. Gynâkologie*, Bd. 56, Heft. 2) find from experiments on animals that, when the Fallopian tube had been ligatured close to the uterus directly after conception, no tubal fœtation results. They conclude (1) that closure of the tube is not sufficient to produce a tubal pregnancy, and (2) that the tubal mucosa is not, as a rule, capable of forming a decidua. In the second part of the paper the writers describe in detail 77 cases which were operated on in Schauta's clinic in Vienna. It is remarkable that a great number (27) of these tubal fœtations occurred in women suffering from gonorrhœa. Out of 67 cases where the pregnancy was interrupted in the first four months, it was due in 11 cases to rupture, in 56 to tubal abortion, and in 4 to both simultaneously.

GYNÆCOLOGY.

Ectropion of the Female Urethra.—By Isaac Mossop, F.R.C.S. Ed. (*Brit. Med. Jour.*, October 1, p. 988).—Ectropion or prolapse, of the female urethra is not often seen, and is, in children, usually ascribed to irritation from intestinal worms, especially ascarides, less frequently to vesical calculus and other conditions. The urethral opening is visible in the centre of the rounded projection, complete disappearance on reduction, and reappearance when the support is withdrawn. The symptoms are frequent and painful micturition, with occasional bleeding on straining. A well-nourished girl, aged 9, had frequent and painful micturition, and passed blood for 2 or 3 weeks. A small rounded dark-red swelling, the size of a cherry, was seen around the orifice of the urethra, the meatus being in its centre. It was very tender, and bled slightly. Careful examination revealed that it could be reduced. It was, repeatedly, by means of a small piece of cotton wool on sinus forceps. The swelling immediately returned as soon as the pressure was removed. The urine

was normal. There was no calculus. Astringent lotions were ordered, which slightly altered the character of the swelling; it became more flattened, smaller, lost its congested appearance and resembled a rosette.

Under chloroform an eliptical portion was removed from either side of the prolapse, and the opposing surfaces were stitched together.

There was no difficulty of micturition after the first day, no pain, and the frequency diminished. There was complete relief three weeks after the operation. A point of interest is that there was no assignable cause.

The Topical Use of Quinine in Leucorrhœa.—W. Hardwicke, M.D., M.R.C.P. (LANCET, January 7, p. 126).—Quinine topically applied to the mucous surfaces of the cervix uteri and vagina was suggested by the good effects accidentally manifested by this drug when used in the form of pessaries. A patient, the mother of six children, who had been a sufferer from the above complaint for some years, having used the various remedies usually prescribed in such cases but with only temporary benefit, her trouble sooner or later recurring, adopted the use, from prudential motives, of what proved to be quinine pessaries. Since using them not only had her leucorrhœa disappeared but her general health had improved. I have since used quinine topically in several cases of simple lucorrhœa always with great success—in fact, I do not know of a single instance in which it has failed or in which quinism has been produced. It may be used in the form of douche or pessary. I adopt the latter form as being obviously the better one; the drug has a better chance of closer and more continuous contact with the congested membrane. I prescribe three grains of the hydrobromate in a half-drachm pessary in combination with oleum theobromatis, but the pessus quininæ of the "Extra Pharmacopœia" containing the hydrochloride answers just as well. One insertion a day is generally sufficient.

Hypertrophied and Pendulous Mammæ in Young Woman.—Hutchinson (*Archives*, viii., p. 32) relates the case of a girl, aged thirteen, thin and weakly, whose breasts began to enlarge at thirteen. At fifteen they became so large that they had to be removed in consequence of aching and encumbrance. The right weighed four and one-half pounds and the left two pounds. Examination showed that they consisted of hypertrophied fibrous tissue and gland elements. There were no cysts. The patient improved much in health and mensurated for the first time six months after the operation.

The disease usually begins about puberty, is progressive and attended by emaciation and some degree of cachexia Not infrequently mensuration is suspended. Mr. Hutchison's explanation is as follows:—The female breast is, of all the organs, the one in which developmental and functional changes show their widest range, and whose nutrition is to the largest extent under the control of reflex influences. At puberty, in association with ovulation, the breasts naturally enlarge. This enlargement may be supposed to be in some measure controlled and limited by mensuration. In these cases perfectly natural growth fails to submit

itself to influences which should control it, and continues without restraint. Other but less common cases take their origin from the normal influence of pregnancy. Thus, in its initiation, the hypertrophy is an evidence of weak nutritional control and of disturbed or exaggerated reflexes. It is also probably concomitant with weak tissues, and the over-grown gland does not receive that support from its ligaments and overlying skin which it needs unless artificial means are carefully used. Thus the principle—*vires acquirit eundo*—so important in pathology, as in physics and morals, comes into play.

The Diagnosis of Double Uterus.—J. Bastian (*Rev. Méd. de la Suisse Rom.* October 20, 1898), publishes two cases of this malformation, one a uterus bilocularis with a double cervix and vagina, the other a uterus bicornis with a single cervix and an incomplete vaginal septum. He believes such deformities to be much commoner than is usually supposed, being frequently overlooked. One of his cases bore out Meurer's statement that in such cases the pelvis is abnormally large owing to the sacrum being widerand more curved than usual. The symptoms may, in the absence of careful examination, simulate metritis. Thus if both sides of the uterus mensurate together, as in one of Bastian's cases, a physiological menorrhaghia results; if alternately, there appears to be metrorrhagia. There are three chief varieties, the uterus bilocularis, the uterus bicornis, and the uterus didelphys. A diagnosis can be made by methodical examination: (1) The labia minora must be separated to see whether the vagina is septate or not; if it is, a uterine malformation must be suspected. (2) A uterus bilocularis appears on bimanual examination to be of normal shape, though abnormally large. On passing two sounds simultaneously, one to the right and one to the left, it can be felt that there is a septum dividing them, and by moving them about whether it is wanting in places, as, for instance, when there is a single cervix (uterus bilocularis unicollis). They are found in 32 per cent. of double uteri. (3) The uterus bicornis is the most frequent variety, forming 55 per cent., and may occasionally be diagnosed by bi-manual examination alone. More often it is necessary to bring the cervix down to the vulva with volcella forceps, and then to explore the posterior surface of the uterus from the rectum. Two sounds should be passed, when one learns whether the cervix is double or not (uterus bicornis unicollis). (4) The uterus didelphys is the rarest (14 per cent.) Passing the sounds simultaneously shows that there are two diverging cavities, more or less independently movable. In one in ten of all cases there is atresia of the, usually in such cases rudimentary, vagina or uterus on one side, leading to lateral hæmatocolpos, which simulates vaginal cyst, or lateral hæmatometra, which simulates a swollen tube. These cases are very difficult to diagnose.

A Pessary Retained in the Vagina for Two Years.—Frank (*Münchener Med Wochenschrift*, November 1, 1898) was consulted by a woman who had been given a ring pessary 5 years before for prolapse. For 2 years it had not been removed at all. On attempting to extract it manually, a considerable hæmorrhage occurred, and it was found to be firmly

imbedded in the left side of the vagina by a cicatrix, which formed a kind of tunnel for it. Frank did not cut through this cicatrix, considering that by doing so the benefit derived from the contraction of the cicatrix, and consequent shortening of the vagina would be lost. After failing to cut through the pessary with scissors, he divided it with a small saw, then broke it in half, and removed the two halves separately. That he was right not to divide the cicatrix was proved by the prolapse not returning.

The Influence of the Kidney on the Circulation.—Tigerstedt and Bergman (*Scandinav. Arch. Physiologie*, viii. 4 and 5, p. 223)—The researches of these writers have been directed to the investigation of the "internal secretion" of the kidney. They found in the kidneys of the cortex of rabbits a substance which, when injected into a vein, produced a rise of blood-pressure lasting some twenty minutes or more. The substance is soluble in water in weak saline solutions and in glycerine, but not in alcohol. It is not dialysable, and is destroyed by boiling. The rise of blood pressure which the injection produces is not affected by division of the spinal cord, but as the effects of the depressor nerve can still be elicited in spite of its presence in the circulation, they infer that the substance exerts its effects through the medium of a peripheral nervous mechanism, and not directly on the vessel walls. Nor does it appear to have any direct action upon the heart itself. So that (in a few experiments) injection of blood from the renal vein was found to produce a rise of blood-pressure in animals whose kidneys had recently been extirpated, the writers consider that the internal secretion is constantly passing from the kidneys into the circulation. They conclude by discussing the possible connection between the existence of this internal secretion and the high blood-pressure found in many cases of renal disease.

The Chemistry and Action of the Thyroid Gland, a further paper. —Dr. Robert Hutchinson (*Journal of Physiology*, No. 3, Vol. 23) finds that the dried colloid matter contains on an average 0·309 per cent. iodine. The products that result from the digestion of the colloid matter are described in detail. Of these, the peptone, which is practically iodine-free, was found to be inactive; the albumoses contain a little iodine, and are feebly active. Most of the iodine is contained in the proteid free residue of digestion, and this is the most active part of the colloid. Its relation to iodothyrin is discussed. All these preparations were tested on a case of myxœdema. Seeing that the colloid matter can easily be made to take up ten times as much iodine as it normally contains without having its activity at all increased, the conclusion is thereby arrived at that it is the form in which the iodine is combined, and not the iodine itself, that is the important feature of the colloid matter. The writer finds that the fall of blood pressure, which has been observed to follow intra-venous injection of thyroid extract, is to be attributed to the "extractives." and not to the active ingredient. This statement is based upon the effects observed after the injection of the different

ingredients of the extract separately. The clinical facts of the enlargement of the thyroid during pregnancy, of alteration in the size of goitres at the menstrual period, etc., lead to an experimental investigation of the relationship between the reproductive glands and the thyroid. It was found that previous castration or ovariotomy in dogs and cats did not in any way affect the results that usually follow complete thyroidectomy. The conclusion is drawn from this that the reproductive glands do not act in any antagonistic way to the thyroid or parathyroid. Whether there is any supplementary relationship between them is left undetermined. The writer has found that neither the administration of ovarian substance nor of fresh parathyroid glands has any curative influence in myxœdema.

The Percentage of Hæmoglobin and the Numbers of the Red and White Corpuscles at Different Ages and Under Normal Conditions.—Schwinge (*Archiv. f. d. Gesammte Physiologie*, p. 299, October, 1898).—This very elaborate paper contains a large number of observations on the blood of healthy human beings, under various conditions of life. the hæmoglobin was estimated by the Fleischl-Miescher Hœmometer, and the corpuscles by means of the Thoma Zeiss instrument. The chief conclusions of the writer are as follows:—

The amount of hæmoglobin and of the corpuscles is different at different ages.

The red corpuscles and hæmoglobin are highest just after birth, soon after which they sink to a minimum, but gradually rise again as growth proceeds, and remain fairly constant from the time of full develepment till towards the close of life, when they again fall off.

The white corpuscles, on the other hand, diminish steadily from birth till full development is reached, after which they rise again to a slight extent.

During the active reproductive period of life females have fewer corpuscles than males, but after the climacteric the numbers tend to become equal again.

The writer attributes the differences in the number of the corpuscles to variations in the concentration of the blood rather than to actual differences in the numbers of the corpuscles themselves. The high percentage of leucocytes in fœtal life is probably due to their more rapid formation during that period of existence.

Acute Poisoning by Different Alcohols.—Baer (*Arch. f. Anatomie und Physiologie*, October, 1898).—The writer administered definite quantities of the different alcohols to rabbits by means of an œsophageal tube and observed the effects produced. Three degrees of intoxication were distinguished according to their severity:—slight paralysis of motion and sensibility; (2) total paralysis of motion with almost complete abolition of sensation; (3) coma, often ending in death.

It was found that the toxicity rose with the boiling point of the alcohol, methyl being least toxic, and ethyl coming next, while propyl was twice. butyl three times, and amyl four times as toxic as ethyl.

The addition to ethyl alcohol of 4 per cent. of an alcohol of higher boiling point increased the toxicity of the former to a marked extent. The addition of 2 per cent. was much less powerful, while 1 per cent. had practically no effect in increasing the toxicity.

He concludes that the symptoms of acute alcoholism are *not* due to impurities in the ethyl alcohol, but leaves it an open question whether these may not have some share in producing the more chronic results of alcoholic excess.

Deficiency of the Gastric Secretion.—Prof. Ewald (*Bristol Med. Chir Jour.*, Dec., 1898).—Recent work has demonstrated that patients may remain healthy and maintain nutrition in the presence of great deficiency of the gastric secretion, so long as the motor power of the stomach is sufficient to promptly carry on its contents into the intestine. If, however, this fails, dilatation is gradually established and increases, and all the consequences of retention and abnormal fermentation follow.

The Nutritive Importance of the Intestinal Bacteria.—Schottelius (*Munchener Med. Wochenschrift*, September 6, 1898, p. 1155) states that for the digestive ferments to act efficiently, they must be aided by the intestinal bacteria and their products. By rendering hens' eggs absolutely sterile, and by incubating them in a chamber, which with its contents was perfectly sterile, he obtained aseptic chickens. These were fed on sterile food; they did not thrive, however, and were all dead by the seventeenth day. Other chickens hatched at the same time, from eggs of the same weight, but fed with ordinary food, did well and gained weight rapidly.

Nuttall and Thierfelder came to an opposite conclusion from similar experiments, which, however, were vitiated by the fact that they were unable to render the brood-eggs absolutely sterile.

NEW REMEDIES.

Terpinol in Bronchial Dilatation,—Rabow (*Bull. Gén. de Thérap.*, cxxxvi.) thus prescribes terpinol in pills or capsules: Terpinol, sodium benzoate, of each 1 gramme; sugar, *q. s.* Divide into 10 pills or capsules, and take one every hour or every second hour. Or, terpinol, 10 centigrammes; olive oil, 30 centigrammes, in a gelatine capsule, to be taken every two hours.

Oxidized Chrysarobin in Skin Diseases.—Unna (*Bull. Gén, de Thérap.*, cxxvi.) employs oxidized chrysarobin, obtained by the action of sodium peroxide on chrysarobin suspended in water, in eczema and other cases where the action of ordinary chrysarobin is too irritating. It is applied in the following ointment: oxidized chrysarobin, 2 to 5; vaseline and lanoline, of each 25.

Tribenzoyl-Gallic Acid.—This is a new astringent obtained by shaking an alkaline solution of gallic acid with benzoyl chloride and purifying the resulting product by crystallization, after boiling with

water. The compound is odourless, tasteless and colourless. It is not decomposed by substances with which it may come into contact in the mouth or stomach. An easy but complete separation of the gallic acid only takes place in the rectum, where all the specific properties of the astringent come effectively into play. The acid melts at 176° C.—*Zeit. d. allg. oest. Apoth. Ver.*, li. 859.

CITRIC ACID IN WHOOPING COUGH.—A 10 per cent. solution of citric acid in simple syrup is stated by M. Tilho to be a useful remedy in the treatment of pertussis. It is employed locally in swabbing the periglottic region of the larnyx. It also proves to be an efficient prophylaxis against infection. He has succeeded in preventing the disease in many children living with others infected by this means, or merely by the administration of small quantities of citric acid lemonade.—*Boston Med. Jour. Surg.*, cxxxviii., 626.

CREOSOTE IN CHRONIC CONSTIPATION.—Commencing with doses of single drops increased to 7 or eight drops in a glass of milk or beer after lunch and dinner. Vladimer (*Semaine mèdicale*) has found creosote to be a valuable remedy in chronic constipation. Its use is not accompanied by any pain or discomfort, and it appears to act by neutralizing an intestinal toxine which causes the malady by paralyzing the digestive canal. *Bull. Gén. de Thérap.*, cxxxv., 15.

METALLIC IODINE IN SYPHILIS.—Bouveyron recommends the treatment of syphilis with metallic iodine, which is prescribed thus: Iodine, 1 gramme; potassium iodide, sufficient to dissolve; glycerin, 5 to 10 grammes; citric acid, 5 grammes; simple syrup, to 1 litre Two teaspoonfuls are taken to commence with, the dose being gradually increased to 6 or 9 teaspoonfuls. These are taken on an empty stomach half an hour before a meal.—*Bull Gén. de Thérap.*, cxxxv., 799.

MERCURIAL OINTMENT INTERNALLY IN SYPHILIS.—The treatment of syphilis by the internal administration of mercurial ointment finds many followers in continental practice It is stated that the metal is better absorbed in this form. L. Silberstein prescribes it in pills thus: Mercurial ointment with lanolin basis, 4·5 grammes; powdered liquorice root, 5 grammes; glycerin, 5 drops; mucilage of acacia *q.s.* to mass. Divide into 60 pills; each pill contains 0·025 gramme of mercury—*Therap. Monats.*, xii., 397.

ALKALIES IN SKIN DISEASES.—P. G. Unna (*Monatsh. f. Prak. Dermat.*, 898, 27, 65), commenting on the increasing use of alkalies in dermatology prescribes the following formula for a caustic paste: Potassium hydroxide, lime, soft soap, and water equal parts), to be made into a paste. This may be diluted with glycerin, so as to modify its action. Water should not be applied to the parts while this dressing is being used. Apply with a small piece of cottonwool, over which a bandage moistened with water is placed. To moderate the pain caused by the first application 5 or 10 per cent. of morphine alkaloid may be incorporated with the paste. This is found to be more efficacious than cocaine or encaine.

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RECENT ADVANCES IN BRAIN SURGERY.

BY HENRY O'NEILL, M.D., M.CH.,

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This department of surgery always demands our most earnest attention because of the serious consequences which may arise from apparently trifling injuries to the head. Head injuries are of special importance because they may not be limited to the outer soft parts and the bones, but may affect the brain and its membranes. The brain is well protected by a dense fibrous scalp and firm hard skull. Within the bony case lies the brain enveloped by its membranes, and protected by fluid outside the convolutions and within the ventricles. Inflammation of the brain and its membranes usually follows injuries of these structures; serum is exuded, which produces swelling and pressure, and can be relieved only by an operation such as trephining. Occasionally the intracranial pressure is relieved by the escape of the intracranial blood and cerebro-spinal fluid into the spinal canal. Should the pressure increase, the functions of the brain become interfered with, or they may be completely destroyed. This change or loss of function may affect the motor, sensory, or intellectual functions of the brain, and produce spasm or paralysis, hyperæsthesia or anæsthesia, mania or coma. At first the change or loss of function may be local, and cause paresis or paralysis of an arm or a leg, or half of the face, alteration or loss of speech. If the brain injury is severe, complete loss of function may occour and death supervene. Sometimes the alteration will be obscure, and is functional rather than organic, and will produce headache, epilepsy, or insanity without any apparent change in the substance of the brain. Epilepsy may be caused by the pressure from a blood clot following head injury with or without a fracture of the skull.

LOCALISATION OF FUNCTION IN THE BRAIN.—The localisation of function in various parts of the brain has been well recognized during the past twenty years. Cerebral surgery has become a most important branch of general surgery. Through the scientific labors of Horsely, Ferrier, and Macewen in Britain, Broca in France, Fritsch in Germany, marvellous results have been obtained in the surgical treatment of diseases and injuries of the brain. Until quite recently operations on the brain were seldom successful, the chief reasons being imperfect knowledge of the cerebral motor areas and want of aseptic precautions in the treatment of wounds.

MOTOR AREAS.—The chief motor areas in the brain of the monkey, as demonstrated by Horsley and Schafer, have been shown by physiological experiment and *post-mortem* examination to correspond closely to the same cortical centres in man.

The upper third of the convolutions in front of and behind the fissure of Rolando corresponds to the centre for the movements of the leg, the middle third corresponds to those for the arm—beginning at the upper end for the shoulder centre, the middle part for the elbow centre, and the lower for the hand centre.

In the lower third lie the face centre and the centre for the mouth and larynx. The centres for the head, leg, and trunk are situated chiefly on the median surface of the hemispheres as well as on their external surface. Broca's centre for speech lies just in front of the end of the

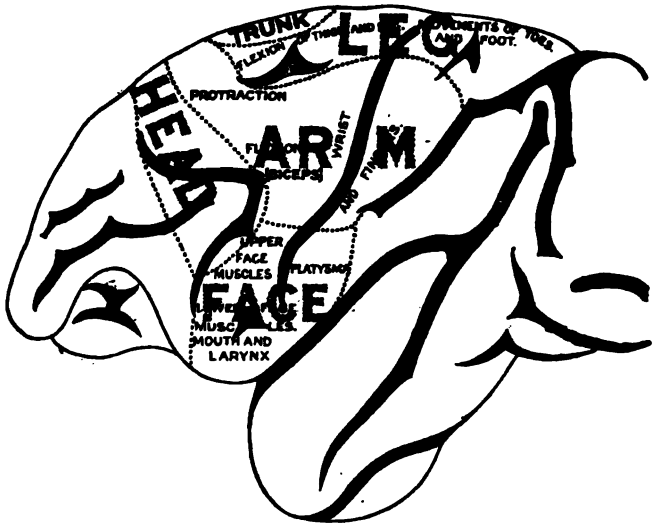

Fig. 1.—Motor areas on the outer surface of the brain (Horsley and Schafer).

fissure of Rolando, and in angle formed by the main trunk and the anterior limb of the fissure of Sylvius. The centre for vision is situated in the cuneus, a lesion of which produces blindness of the corresponding (right or left) half of both retinæ. The supramarginal and angular gyri are also concerned to some extent in vision. These same convolutions—supramarginal and angular—are the seat of certain mental processes, the loss of which produces sensory aphasia, agraphia, etc. The centre for hearing is probably situated in the middle and posterior parts of the first temporo-sphenoidal convolution. The centre for smell is probably situated in the uncus, near the lower part of the hippocampus major.

MODE OF ASCERTAINING THE RELATIONS OF THE CEREBRAL CONVOLUTIONS TO THE SCALP SURFACE.—The method of ascertaining the relations of the cerebral convolutions to the scalp surface which I consider best and simplest is that described by Prof. J. Chiene, in the *Edinburgh*

Medical Journal, 1893-94. In addition to the motor areas round the fissure of Rolando, we now as operating surgeons require to know the relations of the temporo-sphenoidal lobe in connection with ear disease, the supramarginal convolutions in puncture of the lateral ventricle, the angular convolutions in word blindness, the occipital lobe in lesions of sight. The relations of the whole brain, except the anterior extremities of the parietal lobes, have become a necessity for the operating surgeon. A simple easily-remembered, and trustworthy method of localisation is all-important. One free from the necessity of remembering exact angles or exact measurements in inches will save a burden on the memory, altogether apart from the fact that angles must vary in different shaped skulls (the fissure of Rolando various from 65° to 72° in its relation to the sagittal suture), and from the fact that the measurement in inches will vary with the size of the cranium and the age of the patient.

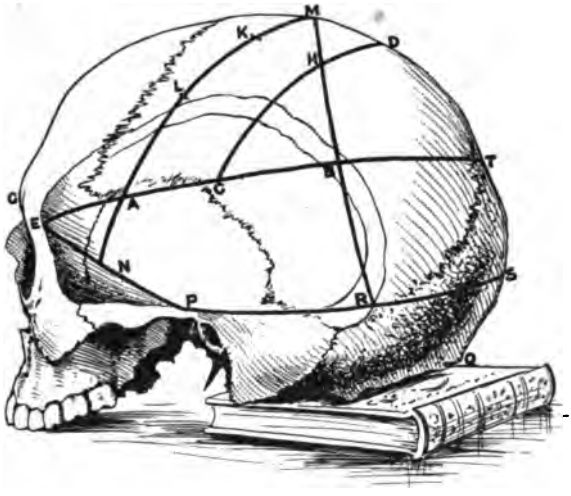

Fig. 2.—Diagram of cranio-cerebral relations (as described below). (From Prof. John Chiene).

The head being shaved, find in the mesial line of the skull, between glabella G and the external occipital protuberances O, the following points: (1) The mid-point M. (2) The $\frac{3}{4}$ point T. (3) The $\frac{7}{8}$ point S. Find also the external angular process E, and the root of they zygoma P, immediately above and in front of the external auditory meatus. Having found these five points, join E P, P S, and E T; bisect E P and P S at N and R, bisect also A B at C, and draw C D parallel to A M. The pentagon A C, B R, P N corresponds to the tempora-sphenoidal lobe, with the exception of its apex, whiah is a little in front of N M D C A corresponds to the Rolandic area containing the fissure of Rolando, the ascending frontal and the ascending parietal convolutions. A is over the anterior branch of the middle meningeal artery, and the bifurcation of the Sylvian fissure. A C follows its horizontal limb. The lateral sinus at its highest point touches the line P S at R. M A = the

precentral sulcus, and if it be trisected at K and L these points will correspond to the origin of the superior and inferior frontal sulci. The supramarginal convolution lies in the triangle H B C, the angular gyrus is at B

Professor J. Symington, Belfast, has recently described a simple and accurate method, which he has found useful in localising the motor areas of the brain

I hope the members of this Association will soon have an opportunity of judging of its undoubted value in surgical practice, when he gives us a demonstration similar to one he gave in Edinburgh before the members of the British Medical Association in July last, which so greatly interested all those who saw it.

THE ASEPTIC TREATMENT OF CEREBRAL WOUNDS IN THE OPERATION OF TREPHINING.—The day before the operation, first, shave the scalp; secondly, wash the scalp thoroughly with soap and warm water scrub well with a nailbrush. Particular stress must be put upon the scrubbing, which should be done vigorously and carefully, as mechanical friction is the most efficient means of removing the superficial layers of the epidermis, for it is in these layers chiefly that we find the impurities adhering which contain the infecting micro-organisms. Rinse with sterilized water and dry, next rub over with turpentine, afterwards with ether and alcohol, and lastly with a solution of perchloride of mercury (1 in 2,000) or carbolic lotion (1 in 40). Cover the scalp with eight layers of gauze sublimate dressing secured by a bandage, which should remain on the scalp until the time for operating.

The patient is placed on the operating table in a semi-recumbent position with the head raised, lying between sterilised linen sheets, so as to leave only the region to be operated on uncovered and freely accessible. All instruments and dressings must be cleaned and sterilised as well as the hands and finger nails and arms of the operator and his assistants. The operator and assistants should wear sterilised linen overalls.

Before commencing the operation the surgeon should map out the fissures and motor areas on the scalp by means of an aseptic aniline pencil. Chloroform or bichloride methylene should be administered with a Junker's improved inhaler, and 2 minims of inject. morph. hypoderm. given immediately before the anæsthetic.

TECHNIQUE OF THE OPERATION.—It is important to mark three points on the bone—first, the place where the centre pin of the trephine is to be applied; secondly, the upper end of the fissure of Rolando; and, thirdly, the lower end of the same at points just outside the flap in order that the fissure may be recognized after the flap has been raised; this may easily be done by using the centre pin of another trephine.

THE FLAP.—The flap to be raised should be horseshoe shaped, with a diameter of about 3 inches. The base of the flap should be below on account of the blood supply coming from that direction; the flap of periosteum should be raised with the scalp. The hæmorrhage can easily be arrested by grasping the bleeding points with torsion forceps. The trephine opening should be at least an inch and a half in diameter, and this can be enlarged by means of a rongeur forceps to the desired extent.

Before enlarging it the dura mater should be separated from the bone by Horsley's dural separator, which can also be used for exploring the inner surface of the skull.

RESECTION OF THE SKULL.—The scalp is freely incised down to the bone, the flap remaining attached to the latter. By mallet and chisel the bone is almost cut through at every point except its base, the separation being completed by an osteotome; it is then raised by an elevator, the base being fractured, forming a kind of window in the skull by turning back the flap. In this manner a large area of brain substance can be exposed. When the operation is completed the bone and flap are replaced, and the skin sutured; the base of the flap should be in that part of the tissues which has the largest blood supply. A surgical engine or an electro-motor with a saw may be used instead of the chisel. As a rule it is best to open the dura mater on a line parallel with the edge of the bone a quarter of an inch from the margin, care qeing exercised not to wound the large veins beneath the dura mater.

Hæmorrhage from the middle meningeal artery may be arrested by passing a curved needle through the dura mater under the vessel, and securing it by a fine catgut ligature. After opening the dura mater observe if there is any bulging of the brain substance into the trephine opening; if so, it may be caused by a tumor, an abscess or an internal hydrocephalus. Lividity or yellowish tinge will indicate a probable tumor in the cortex; absence of pulsation in the brain is evidence of a arge tumor, abscess, or cyst. Should the brain substance be abnormal, the entire affected portion should be removed. It is better not to drain the wound after cerebral operations, where strict aseptic precautions have been observed. In gunshot wounds, abscesses, and hæmorrhages drainage is necessary.

In many cases the bone, or at least parts of it, can be replaced, and the flap of skin should be closed by interrupted silk worm gut sutures.

Dressings.—The wound should be dressed with sterilized gauze, kept in position by sterilized gauze bandages. The patient should be placed in bed in a cool, quiet, darkened room, with the head raised on a high pillow, and an icecap applied to the scalp. The dressings should not be removed for at least a week, unless discharges pass through them, or the temperature exceeds 100° F., or the patient complains of severe pain and restlessness. The food should consist chiefly of milk, with beef-tea and light soups. The bowels should be kept regular by means of a saline purge, and a catheter used to empty the bladder if necessary.

The treatment I adopted in the cases of fracture of the skull, I consider is according to the most recent and best methods, and has been fully justified by the results obtained. In each case I trephined the skull at the seat of fracture and elevated the fragments, although in one of the patients there were no symptoms of pressure on the brain.

Some years ago leading surgeons taught that trephining should not be performed in patients suffering from depressed fracture, where no symptoms of pressure were observed, such as paralysis, convulsions, or mental disturbance. In such cases head symptoms often developed after months or years, which rendered the patients liable to much suffering and

early death. No advantage is likely to arise from operation when these urgent symptoms are the result of a general cerebral contusion. The elevation of depressed bone is a radical measure of relief, because with the removal of the cause of the symptoms the possibility of the continuance or recurrence is removed, and the removal of a clot from the surface of the dura mater is made effective by the ligation, if necessary, of the ruptured vessel. As a rule, it may be stated that operation in head injuries should generally be performed in depressed cranial fractures, uncomplicated epidural hæmorrhages, and seldom performed in subdural lesions, whether of brain or pio-arachnoid membrane.

If, in accordance with the older clinical rules, operation is seldom to be resorted to in the general class of intracranial injuries, it must not be overlooked that the decision to be inactive on the part of the surgeon carries with it a very grave responsibility, since an error in judgment may deprive the patient of a chance of life by increasing the danger of an already critical condition. This will, I think, be apparent from the comparative safety of exploratory puncture when conducted as I have described by modern methods.

The acceptance or rejection of an operation as a method of treatment when brain lesions are independent of accessible cranial fractures is to be decided in each instance upon clear and specific evidence. Intracranial exploration will be proper or improper as it is made with or without a sufficient reason, and not as it may conform to an opinion based upon a wide generalisation of results that it is a good or a bad procedure.

There are cases in which the remote results of intracranial injuries demand as careful treatment as those of recent origin. These include paralysis and convulsions which are often due to the imperfect absorption of surface hæmorrhages or superficial or ventricular effusion from the original contusion. An explanatory examination of the cranial contents is certainly justified when permanent functional derangements succeed the primary effects of intracranial injury. The risk of danger in performing cerebral operations should always be carefully considered by the surgeon. In the treatment of subdural lesions the operation is in itself a source of danger, and should be performed only when there is a fair hope of a favourable result. There can be no question that our duty is to elevate each depressed fracture, to remove foreign bodies from the brain or epidural clots from the cranial cavity, because less danger is incurred by the operation than is involved in the continuance of the morbid condition which it is sought to remedy.

In conclusion, I thank you for your kindly and thoughtful attention during the delivery of my address, which has encouraged me to hope that you will by your cordial co-operation with one another still further promote and extend the principles which have done so much to render possible recent advances in brain surgery. I acknowledge with pleasure my obligations to Lord Lister, Professor Victor Horsley, Professor J. Chiene, Professor W. Macewen, Professor P. Redfern, Professor J. Symington, Dr. J. Harold Stiles, Dr. W. W. Keen, Dr. J. William White, and others whose writings and teachings have contributed so much to the relief of human suffering and the advancement of the science and art of surgery.

CORRESPONDENCE.

INTERPROVINCIAL REGISTRATION.

DEAR SIR,

The present time is a most favorable one for the movement which is being so ably furthered by Dr. Roddick, our popular and influential representative in the House of Commons. Not only have we Sir William Hingston to support him in the Senate, but at the present time the Provincial Legislatures are all in accord with the Federal Parliament, and will do almost anything which the latter may ask of them. The colonial secretary Mr. Jos. Chamberlain is most favorably disposed towards Canada and with his immense influence could obtain for us any legislation we might require. With the whole profession in Canada in favor of it, and the Provincial Medical Boards and Legislatures raising no objection to it. I think that there would be no insurmountable difficulty in getting a short Act passed by the parliament of Canada and even, if necessary, by that of Britain.

I would however like to point out a much simpler method of obtaining what they desire; namely by changing the name from Dominion Board to University of Canada. There was nothing in the British North America Act to prevent the Parliament of Canada from granting a charter to a University of Canada, with power to grant degrees in medicine, the holders of which would be entitled to practise in all parts of Canada. The Act granting this charter could if necessary be ratified by the British House.

As the University of Canada would be an examining body and not a teaching one it would be in no way interfere with the rights of the Provincial Boards or Medical Schools which would continue to carry on their work precisely as they are doing at present, for those who were satisfied to practise in their own province only. Those who wish however to practise all over the Dominion must pass through a uniform portal the barriers of which should be at least as high as those of any provincial board. And that portal would be the matriculation and final examinations of the University of Canada. Even when armed with this degree its holder must obey the same regulations and pay the same fees annually as the other practioners of the province in which they desire to practise. By calling it the University of Canada it would become a national institution and an object of national pride, so that the Government of Canada would come to its aid financially during the first few years, after which it would be self supporting. I do not see any difficulty either in the matriculation or final examination. Some man of high standing would be appointed in each provincial capital or chief city to hold the entrance examination simultaneously. Sealed examination papers would be sent to him some days before but would only be opened by him after all the candidates had entered and the doors were locked.

This would be taking place at the same hour and minute in the seven distant cities, from Vancouver to Halifax. When the allotted time was up the papers would be signed and sealed by the examiner and forwarded to the central committee, who, without knowing the writers' name, would apportion the merited marks, and forward certificates. On presentation of these certificates and proof of five years study of medicine the candidates could come on for a fixed date every year before the examiners of the University who would be chosen from the present provincial examiners or other eminent teachers. As to the clinical examination the committee on clinics together with all the canditates could take a two hour and a half ride down to Montreal and hold the examinations at the big hospitals, and return to Ottawa the same or the following day. As soon as the results of these examinations had been added to the others the convocation could be held and the degree be signed and given by the Governor-General. The examinations might be more severe on practical subjects for those who had been over ten years in practice, and more severe in theoretical subjects for those who had just left the medical school. The fees should not exceed fifty dollars which with a government grant of ten thousand dollars a year for ten years would be ample to defray all expenses, as examinations would be held only once a year in the month of June.

Trusting that you will lend the weight of your personal and editorial influence towards remedying the present annualous state of affairs.

I remain yours sincerely,

250 Bishop Street, Montreal A. LAPTHORN SMITH.

Hyperchlorhydria is a condition in which the stomach secretes an excessive amount of gastric juice when digestion is not in progress, especially at night, this gastric juice being either normal or containing an excessive amount of HCl.—Prof. Ewald (*Brit. Med. Jour.* 1898, ii. 1324) first employs tonic and hygienic regulations for the general condition, and, secondly, regular evacuation of the contents of the fasting stomach, and the introduction by means of Einhorn's stomach spray, or the stomach douche of a half per cent. solution of $AgNO_3$. During the day he gives every two hours a teaspoonful of a five per cent. solution of potassium iodide and bicarbonate of soda, and allows only rectal alimentation, in order to avoid all irritation of the gastric mucous membrane. He has found, after a large experience, the ordinary sedatives, bromides, zinc, belladona, codeia, morphia, and hyoscyamus, of no use. Dr. Joslin (*Boston M. and S. J.*, 1898, cxxxviii., 389) has found tincture of nux vomica the only drug of value in this condition. He gives ten drops three times a day, increasing one drop daily until a maximum daily dose of sixty to ninety drops is reached. At the same time outdoor physical exercise is enjoined, and massage employed where the motility of the stomach is at fault. Should these measures fail, the stomach tube should be used.—*Bristol Med. Chir. Jour.*, Dec.

THE GENERAL PRACTITIONER IN RELATION TO THE INSANE.

BY ERNEST HALL, M.D., L.R.C.P., ENG.; FELLOW OF BT. GYL. SOC., VICTORIA, B.C.

As justly observed by Dr. Yellowlees of Glasgow University, the subject of mental disease is being regarded with an interest and intelligence very different from the superstition and prejudice entertained by the public twenty years ago. We have satisfactorily shaken off the posses sion-by-the-devil theory, but while the intelligent public are grasping a more rational conception, is it not a fact that there are yet some of us slow to recognize that insanity is the product of a pathological process, a process that is not infrequently determinable and occasionally amenable to treatment, and one that in all cases should be made the subject of direct investigation? Sufficent evidence is at hand to warrant us in stating that every form of mental derangement is dependent upon "physical or chemical changes in the structural elements of the nervous system and the operation of pathological processes which may be seen at work in other parts of the body."

As an accurate pathology is the basis of scientific therapeusis in other departments of medicine, the same should obtain in this, and each case presenting symptoms of mental aberration be investigated with the definite care with which we would exercise in determining the cause of a severe abdominal pain. Too often these cases are hurried to the cells, given a hasty examination (?) and committed to the asylum there to be one of hundreds, to improve or grow worse, to live or die as the case may be

Upon the general practitioner the modern conception of insanity lays new responsibilities, for it is he who first has the care of such cases. It is his province where such an unfortunate is presented to him to consider the patient one suffering from physical disease, and to proceed as with cases presenting no mental symptoms, and endeavor to determine the the nature and location of the lesion, and when determined to resort to such measures as he might consider necessary, and not as has too often been the case to consider all cases beyond the jurisdiction of practical medicine the moment mental abnormality (acute sepris excluded) appears. In many cases the cause may elude his skill, and the patient require the restraint of asylum life, but in other cases the cause may be clouded in less obscurity than he had hitherto thought, and in a small proportion of cases may be comparitively easily determined.

Although we cannot yet state that a given local pelvic disease in an insane patient is the cause of the mental symtoms, we have grave suspicions of it being causative, for we have the highest authority for the statement that the sexual organs lie more closely related than any other organs of the body, and the nearer a given pathological condition lies to the sympathetic centres the greater the probability of such condition affecting the nervous health, and of being one of the possible causes for we must not forget that insanity is frequently the result of a multiple focus.

While the purpose of this paper is to direct attention more especially to disease of the female pelvic organs as a cause of insanity, it is not

supposed that other causes are to be overlooked e. g. syphilis. Anyone acquainted with recent medical literature knows what light has recently been thrown in this direction, and more yet remains to be demonstrated of the direct effect of this disease upon the circulatory and nervous systems. Artificial and oppressive conditions of life, so well described by Dr. Russell of Hamilton Asylum, self abuse, prepercial adhesions in both sexes, varicocele, undescended testicles may all be factors while gonorrhea has much to answer for. These few conditions mentioned and many others come directly within the scope of the family physician, and to him we look for treatment.

It is unjust to the patient and cruel to the friends to rush a patient into an asylum without giving an opportunity for rational treatment and hope of recovery. It is no greater disgrace to a family for one member to be insane than for one to suffer from typhoid or myopia, but the public think otherwise, and it will only be the more rational treatment of the insane by the general practitioner that will give the public any different conception.

Possibly the department in which the general practitioner can obtain his best results is that of gynaecology. It is not expected of him that he posses the *tatus raditus* of the specialist, but we do presume that he is able to diagnose and treat the most frequent lesions, and in cases presenting greater obscurity or difficulty that he be sufficiently sincere to engage the co-operation of others of greater experience. If systematic examination were made in every case presenting indications of mental abnormality, and appropriate treatment given, treatment that we would accord to the same condition in the sane, our asylum commitments would appreciably diminish.

As an indication of the possibilities in this department I may be excused for giving the result of examination of cases that have come under my observation since January 1898, who had recently been or who were insane at time of examination :

Cases examined, sixty. Of these fifty-seven had been or were at time of examination in various asylums. Abnormal condition of pelvic organs were found in fifty-six.

The most frequent conditions found are salprugitic adhesions, cystic and cirrhotic ovarus, retroversion with adhesions and lucerations. Only two febroids and no large ovarian cysts. Fungoid endomitorety and varicocile were frequent in those operated upon.

As to results, it being but fifteen months since the first operation was performed, it is too early to speak, but up to the present the result is: Cured, four; improved, six; unimproved, one; made worse, none; died seven week after operation, from minigitis, one; died, resulting from sepists cerebractical operation, one; too early to report, being operations performed within four weeks of writing, eight.

These figures speak for themselves and are an indication of what unconquered fields lie in the path of the general practitioner, ever remembering that more than ever we now realize the truth of the old proverb, *mens sana in corpore sano.*

THE TREATMENT OF DISEASES OF PIGMENTATION.

BY JOHN V. SHOEMAKER, M.D., LL.D., PHILADELPHIA.

Read before the Section on Cutaneous Medicine and Surgery at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

A clear complexion is one of the elements of personal comeliness. A very large proportion of people who seek the dermatologist do so on account of some more or less pronounced defect in the normal and healthy coloring of the skin, especially of the exposed parts. It is needless to say that most of these patients are women. Women are naturally more annoyed and mortified by such blemishes than men. Pigmentary diseases of the skin range from the most trivial to the most serious ailment. Some involve but a slight departure from the normal, others cause extremely dark and unsightly lesions. In most cases the pigmentation is increased or modified in hue, but in a certain number it is diminished. Most diseases in which the pigment of the skin is affected depend upon some more or less grave constitutional cause. A few are merely local disorders.

Lentigo.—This is one of the most common and most insignificant of cutaneous affections. It is purely a local disorder, due to exposure to the heat of the sun and winds of spring and autumn. It is, however, a source of annoyance out of all proportion to its triviality, since it particularly attacks fair and beautiful skins. Freckles consist simply of accumulated masses of normal pigment in the mucous layer of the epiderm. Therefore, it is only necessary to remove this layer in order to cure the disease. The affected parts of the pigment layer may be destroyed by the application of any slightly caustic agent. Among those often used for this purpose are salicylic acid and corrosive sublimate. Touching each spot with strong carbolic acid is a good plan, although a better remedy is copper oleate in the strength of five to sixty grains to the ounce of excipient. The most efficient method of treating these spots is by electricity, used either in the form of electrolysis, inserting the needle superficially over the freckle, or by the frequent application of galvanism.

Chloasma.—Chloasma may be defined as a freckle on a large scale, but, unlike lentigo, it often depends upon the presence of some constitutional disorder. Chloasma uterinum is mentioned in all the text-books, and the chloasma of pregnancy sometimes discolors almost the entire body. As regards its external causes, any agency which keeps up a habitual congestion of the skin may give rise to chloasma.

As the discoloration of chloasma resides in the same layer as that of freckles, its local management is exactly the same as in that disease. It is necessary to avoid agents like mustard and cantharides, which themselves are capable of determining pigmentation. The frequent application of the galvanic current is the most efficient means at our disposal for removal of the pigment. External treatment alone will not suffice if the cause is internal. We must address our medication to the constitutional disorder which has produced the chloasma. In many cases we must

resort to gynecologic measures. In the chloasma of pregnancy we can make use only of local treatment and those tonic, lavative or diuretic remedies which may be indicated by the general condition of the patient.

Tinea versicolor.—Tinea versicolor or chromophytosis is the disease which in gross appearance most nearly resembles chloasma. Unlike the latter, it generally spares the face, although it may appear upon the neck and breast. The characteristic lesion of tinea is of a fawn color, very slightly raised above the surrounding surface, and covered with branny scales. The discoloration may be brown or nearly black. The patches of chloasma are not raised and do not scale. Chloasma is not uncommon upon the face. The parasite of tinea may be found by microscopic examination of the scales. The parasite inhabits the horny layer of the epiderm.

The treatment consists in exterminating the microsporon fufrur. This object can not be readily accomplished as long as water is freely used upon the parts, as that fluid contributes to the nourishment of the parasite. Parasiticidal agents used in this disease are the mercurial preparations, chrysarobin, sulphurous acid, iodin, turpentin, resorcin, carbolic acid, etc. My favorite remedy in this affection is a 10 to 20 per cent. copper oleate ointment, which insinuates itself between the epidermic cells and destroys the parasite. It is not necessary to use a large quantity. Barely enough should be employed to penetrate the surface, and more than this being a superfluity.

Jaundice.—The discoloration due to absorption of bile pigment varies from light yellow to brown. Its nature should be easily recognized from the stain of the conjunctivæ, the discoloration of the urine and its reaction to the bile test, as well as by the accompanying general symptoms. In infants it occurs in consequence of the alterations in the circulation taking place at birth. In some instances it is pyemic, and is caused by umbilic phlebitis. As jaundice depends upon so many pathologic conditions which belong to general medicine or surgery, the attempt to discuss its treatment would stretch this paper to an inordinate length.

Chlorosis.—In this disease the skin assumes a peculiar greenish-yellow hue, owing to the loss of hemoglobin. The red corpuscles themselves are slightly, if at all, diminished in number, but the loss of hemoglobin is out of all proportion. This fact of pathology furnishes the key to the treatment. It is imperative that the blood be supplied with iron. In recent years a number of organic combinations of iron have been added to our armamentarium and have the advantage of being more thoroughly absorbed and better tolerated by the stomach. The diet must be nutritious, perhaps concentrated or predigested, the patient must have fresh air, sunshine, and, if possible, light exercise in the open air.

Morphea.—In the early stages of morphea the affected surface is of a pink or violet hue. At a later period the color fades and the surface has the aspect of ivory, wax, alabaster or marble, or, as it has otherwise been expressed, the part looks as if a piecc of lard or bacon had been imbedded in the skin. The disease is apt to appear in prominent

situations, as upon the face, neck or arms. Fortunately, it is rare. We are in ignorance of the cause of morphea, although it often seems to be dependent upon disturbances of the nervous system. Treatment must be conducted upon general principles. Hygienic measures and constitutional tonics are of service. The best local methods are massage and galvanism. Morphea is essentially chronic and obstinate. If the lesions undergo atrophy, no treatment is of avail.

Scleroderma.—Scleroderma, another rare affection, may occur on any part of the body, but it is more frequent upon the upper extremities. The skin becomes hard, pale and cold in lines or patches, and has been compared to that of a frozen corpse. It becomes firmly bound down to the subcutaneous tissue. When the face is attacked the features are motionless and expressionless. This aspect has been termed the "sclerodermic mask." In extreme cases the skin atrophies, the patient has a hidebound feeling and motion is difficult. Pigmentation may accompany the atrophy. Scleroderma resembles morphea in many respects, but the diseases are distinct. Both are oftenest seen in women. In both the etiology is obscure.

The treatment of scleroderma is not very satisfactory. Hygienic care, tonics and alteratives are of service by promoting the general health. Free diaphoresis, by the use of pilocarpin, is likely to accomplish some good by its action upon the sweat-glands. It is customary to make use of stimulating ointments, especially those containing mercury or iodin, upon the parts. The most promising treatment, however, is by means of baths, massage and electricity. The baths should be warm, frequent and prolonged. Galvanism, static electricity, and electrolysis have been employed with benefit by different authors.

Malaria.—Chronic malaria communicates a pale yellowish tinge to the skin. In hot climates the toxemia may so profoundly impress the liver as to produce actual jaundice. Diffuse patches of discoloration may also be caused by malaria. These may resemble or, indeed, may be identic with the patches of chloasma. Pigmentation due to malaria can only be removed by curing its cause. Among drugs, quinin, arsenic, and iron are of the most value. The most radical treatment is change of climate; if possible, removal to a district free from malaria.

Amyloid degeneration.—This disease gives a peculiar waxy appearance to the surface. As it is the result of serious organic processes which require their own appropriate management, and as it is an ultimate degenerative process, I need not enter upon the consideration of such a vast subject, chiefly of pathologic interest.

Exophthalmic goiter.—Exophthalmic goiter is generally attended by the pallor of anemia, but in some instances brownish or almost black patches develop upon the body. In other cases spots of vitiligo have made their appearance during the course of this disease. Disordered pigmentation is the least important manifestation of Graves' disease. The general objects of treatment must be to tranquillize the action of the heart, allay the morbid excitement of the nervous system, and correct, as far as

possible, the existing anemia. Vascular and nervous sedatives with ferruginous tonics will best accomplish these objects. Hygienic regulation is of the utmost importance.

Addison's disease.—The bronzing of Addison's disease is characteristic, and is very common upon the face and neck. The discoloration varies from amber to dark brown. Exceptionally, spots of vitiligo coexist with the general bronzing of the integument. The pathology of the malady is not yet entirely clear. The suprarenal capsules seem, in most cases, to be at fault, though it would appear that they are secondarily and not primarily affected. As the lesions are often of a tuberculous or carcinomatous character, it is obvious that the treatment can not, at the present time, be of much promise. Certain cases have notably improved under the use of extract of the suprarenal glands. In some of these cases constitutional amendment occurred without any reduction of the pigmentation. I should certainly, however, advise that this new method be given a fair trial in any case of Addison's disease. Of the more usual means of treatment, electricity has yielded better results than have followed the exhibition of drugs.

Leprosy.—Increase or decrease of pigmentation is one of the features of leprosy and possesses diagnostic importance. When fully developed, the disease should be promptly recognized. In its beginning stage, and particularly in a country where it is not often seen, it may for a time escape recognition. An early diagnosis is extremely desirable in order that an individual may not become a possible source of danger to the community in which he dwells. Of the treatment of leprosy I can, unfortunately, say little. The reports concerning Carasquilla's serum treatment do not seem to lend us much encouragement, but I am not without hope that some analogous procedure will eventually be discovered capable of affecting the progress of this terrible malady.

Syphilis.—With the copper-colored eruptions of syphilis we all are familiar, but what has been called the "pigmentary syphilide" is not so universally known. The discoloration varies from gray to brown, and is sometimes so faint that it is only perceived by reflected light. These exceptional pigmented spots of syphilis are prone to appear upon the face and neck. Sometimes the contrast of white and discolored skin produces a dappled or reticulated aspect. I do not propose to occupy your time with any discussion as regards the treatment of syphilis. Suffice it to say that I believe in the wisdom of beginning treatment the moment that the nature of the disease is recognized—whether in the primary or secondary stage. I believe in a protracted and systematic course of mercury with certain stated intervals during which the remedy is suspended. I am of the opinion, furthermore, that there are times when it is advantageous to substitute iron and other tonics for the mercurial, or, at least, to employ them in combination.

Carcinoma.—The peculiar sallow and cadaverous color which is often present in cancer is so well known that we are in the habit of attributing to it a degree of diagnostic significance.

Melanosis.—In both carcinoma and sarcoma a very malignant form is recognized under the title of melanosis, marked by the deposit of dark-brown or blackish pigment, or melanin. Melanotic carcinoma and melanotic sarcoma appear by preference in the eye and upon the skin. Unfortunately, little of encouragement can be given concerning the treatment of melanosis.

Nevus pigmentosus.—Nervus pigmentosus is very apt to appear upon the face and neck. It is, particularly when large and hairy, a sad disfigurement to a beautiful face. I recall the case of a lovely and handsome brunette upon whose chin quite a large hairy mole had been allowed to remain, and which certainly detracted from her otherwise remarkably attractive face. Nevus pigmentosus should be removed, either by excision, ligature, caustic or galvanocautery.

Xanthoma.—Xanthoma, known also as xanthelasma and vitiligoidea, appears as a slightly elevated spot of a yellow color which has been compared to that of chamois leather. Its commonest location is upon the upper eyelid, though it occurs upon other parts of the face. It is often associated with jaundice and sometimes with diabetes and gout. It is generally necessary to remove the growths by caustics, curette or knife. Care must be taken to prevent ectropion. Electrolysis is an effective method of removal. Accompanying diseases will demand their own treatment.

Xeroderma pigmentosum.—The spots of this disease at first appear as freckles, and are apt to occur upon the face and neck. They are yellowish, brownish, or blackish in color. After having been in existence for about a year they undergo atrophy, and the skin becomes as thin as parchment. Old cases cause much disfigurement. The disease generally begins in early childhood. It is peculiar in exhibiting a tendency to malignant change from the tenth to the twentieth year of life. Xeroderma pigmentosum is a very rare affection. The treatment consists in removal of the growths.

Morbus ceruleus.—From some malformation of the heart or great vessels, the blood may be habitually overladen with carbonic acid and deficient in oxygen. In correspondence with the gravity, all that we can do is to study the comfort of the patient and make use of stimulants during paroxysms of dyspnea.

Argyria.—The grayish or bluish discoloration caused by a deposit of silver in the skin is well known, although much less common than before the introduction of the bromids, when the silver salts were the main reliance in the treatment of epilepsy. Potassium iodid is generally recommended for the purpose of removing the stain, but the attempt is not attended with much success

Arsenic pigmentation.—The long-continued ingestion of arsenic will sometimes give rise to localized or diffuse pigmentation.

Albinismus.—In some individuals there is a partial or total lack of normal pigment. Curiously enough, this abnormality is most common in those belonging to the negro race, in whom pigment is most abundant.

Vitiligo is acquired albinism or leucoderma. Like albinism, it is most common among negroes and dark complected whites. Patches of vitiligo are usually outlined by a dark border. This border may be removed by the use of galvanism, and the patch will then be somewhat less noticeable. Irritants, such as croton-oil, oil of turpentin, tincture of cantharides, tincture of capsicum, etc., have been applied to the whitened surface with the hope of exciting a fresh deposit of pigment.

Leukemia and pseudoleukemia.—In leukemia the skin has a peculiar and characteristic light yellow color. In pseudoleukemia or Hodgkin's disease there is habitual pallor, and when the abdominal glands are largely hypertrophied, there is also sometimes bronzing of the surface. These affections depend upon such deep-seated causes, and have such a fatal course, that treatment is essentially futile.

Striæ atrophicæ.—Atrophic lines or spots are usually the result of continued distention of the skin, as, e.g., from pregnancy. Sometimes they are of neurotic origin. They are practically incurable.

There are three agencies which are to be placed above the action of drugs or of surgical procedures in the treatment of pigmentary diseases of the skin. These are baths, massage and electricity.

Vapor baths are of value in removing pigmentary deposits, as in chloasma or in those conditions which are the results of long-continued local irritation. Various medicinal substances are used to enhance the efficacy of the liquid or the vapor, as mercury, balsam of Peru, sulphur, iodin, bromin, etc. Mercury and iodin are particularly valuable when syphilis has any influence in the production of the local condition. Both water and vapor baths are useful in removing pigmentation, when impregnated with bromin or iodin in proper proportions. The influence of immersion or contact with moist vapor is to tranquillize the peripheral nerve-fibers and the capillary circulation and to stimulate the absorbent vessels.

Massage.—In the affections named, massage is very beneficial and particularly when practiced directly after the patient has taken a bath. Massage has an excellent influence upon the skin. It increases the volume and rapidity of the cutaneous circulation, and stimulates the secretory and respiratory functions of the integument. Its favorable action upon the periphery is transmitted to the central nervous system, and therefore, all the conditions of nutrition, local and general, are improved.

Coincident with these effects the absorbent system is stimulated, and thus abnormal pigmentation is often removed. Massage is also serviceable in the reverse condition, viz., a deficiency of coloring matter, as in vitiligo, where the enhanced nutrition of the mucous layer of the integument results in a more healthy deposit and distribution of the pigment. The combination of baths and massage has produced good results in scleroderma, both as regards the rigidity of the skin and its abnormal coloration.

Electricty.—Of all the means at our disposal the use of electricity is the most powerful in restoring normal nutritive conditions to the skin.

This object is accomplished by its action upon the capillary circulation and the terminal fibers of the trophic and vasomotor nerves, its quickening influence upon the lymphatic vessels, and its effects upon the cutaneous glands. In severe cases of pigmentation it is my custom to combine the three beneficial agencies which I have mentioned. I employ at different times and in different conditions static electricity, galvanism and faradism. It is often of most service to alternate the galvanic and faratic currents, thus obtaining the most potent effects of the electric force.

In freckles and chloasma the application of the electric current in the manner indicated is followed by marked improvement. In chloasma it is equally necessary to give attention at the same time to any visceral disorders which may exist. The electricity acts both as a local and systemic tonic. In connection with, or in consequence of, its tonic effect, the electric current has an excellent alternative action, and this extends to the pigmentary as well as to the other functions of the skin.

There is a large class of persons who object strongly to every operative procedure involving the use of the knife. To these the application of the galvanocautery is far less alarming, and many will consent to its use in cases of nevus pigmentosus who will not permit excision. The method is certainly effective.

In conclusion, I can expess my gratification at the results which for many years past I have been able to obtain by the systematic employment of electricity in all cases of pigmentary disturbances not dependent upon lesions so grave and deeply seated that they are, from their nature, not amenable to any form or method of treatment.

The Effects of Anterior Poliomyelitis on the Brain.—Probst (*Wiener klin. Wochenschrift*, 1898, No. 30) adds another to the somewhat limited number of examinations on this subject. A man, aged 68, had acute anterior poliomyelitis at 4. There was atrophy of the left arm and right leg. The brain showed atrophy of the central convolutions on both sides, more marked in the upper part on the right side. The left angular and marginal gyri were also less prominent than usual. Microscopically the cortex in these parts showed normal thickness, but all the cells were small, perhaps diminished in number, but well formed. The medullary rays were thin, the neuroglia of the outer cortical layer increased. In the internal capsules the fibres in the pyramidal tract were abnormally thin, but without signs of degeneration, and the further course of the pyramidal tract was atrophied. Cerebellum, pons, and corpora quadrigemina were small, the olivary bodies small but of the same size. Microscopically the cerebellum showed no alteration. The cord showed atrophy of the lateral pyramidal tracts, especially in the lumbar portion, with the usual alterations of an old poliomyelitis. Probst draws the conclusion that the formed but still developing brain is affected by the disappearance of the peripheral neuron, though not to as great an extent after poliomyelitis as after amputation; and that the cerebellum is affected by infantile spinal paralysis through paths as yet unknown.

TORONTO CLINICAL SOCIETY.

The regular meeting of the Toronto Clinical Society was held in St. George's Hall, Elm St., on Wednesday evening, March 8th, at 8.30 p.m., the president, Dr. F. L.M. Grassett, in the chair.

The following Fellows were present during the evening :—Peters, Fenton, Primrose, Meyers, Badgerow, W. H. B. Aikens, McCallum, Parsons, Wm. Oldright, McIlwraith, Bruce, Trow, H. J. Hamilton, Thistle, Rudolf, E. G. King, Ryerson, Dwyer, Pepler, Bingham, Chambers, A. A. McDonald, Cameron, Nevitt, Geo Elliott.

Nominations for memberships, Dr. Clarence Starr proposed by Dr. Bruce, and seconded by Dr. Primrose.

UNUNITED FRACTURE OF RADIUS AND ULNA.

Dr. George A. Peters presented the patient and describing the accident and present condition of the forearm. Patient is a young man twenty-five years old, was injured on the 29th day of December, 1898 in a thrashing machine. His right hand was caught under a pulley and wound round the shaft in such a manner that the arm was bent backwards over the back of the shaft. The result was that the ends of the bones were driven into the muscles and fascial. It was properly set at the time on anterior and posterior splints; but the bandages got displaced either by the patient himself or the carelessness of his friends. There is a compound injury of both radius and ulna, below the junction of the middle with the lower third of the bones; but no communication. Now there is movement of both fragments, although there was a good deal of callus thrown out and a fair attempt made at union. The radius is separated from the upper fragment of the ulna by a considerable interval laterally. The fracture is oblique and the hand is carried somewhat to the radial side, with some shortening. The lower end of the upper fragment can be felt far forward among the muscles, it probably having gone in among the muscles and separated them and the tendons. One can place one's finger almost between the two fragments and sink it down to a considerable extent. There is no contact in any part at all. The upper end of the lower fragment of the radius feels sharpened and one detects with the finger that it is an oblique fracture. There is now pretty full power of extension of the fingers. Thumb movements are pretty good though flexion is impaired. Circulation is unimpaired except so far as it is always impaired after such an injury. There is a certain degree of cyanosis and tarpidity in the hand. The nerves are unaffected except that the little finger is slightly benumbed. Dr. Peters expressed his intention of doing an open operation dissecting out the bone in front with the periosteum and bringing the bones together. He condemned using any any such thing as the bone ferule introduced by Senn thinking it most unsurgical, and stating he would not wire in this case. The president Dr. Grasett concurred with Dr. Peters in his manner of operating.

Drs. Oldright and E. E. King discussed the case, the latter giving a short concise description of the skiagraph he had taken that day. It showed the radius and ulna were fractured about on the same level, that the radius is overlapping to the extent of ¾ of an inch antera-posteriorly and that the obliquity of the fractures is very slight.

SPLENIC ANAEMIA.—Dr. W. B. Thistle.—The patient presented was a girl nine and a half years of age, having been admitted to the Victoria Hospital for Sick Children October 15th, 1898. The mother and father are both living and fairly healthy; four other children also healthy. Four years previously the child had measles with recovery. She has never been sick since except an occasional headache, until about a year ago when it was noticed she was of a peculiar colour, and had occasional headaches. About a month prior to her admission to the hospital, she had vomiting and headaches with legs slightly swollen. On examination, it was noticed she was of a peculiar pallor. a yellowish olive tint. Auscultation of heart revealed systolic murmur, and cardiac dullness was found to be increased. The liver showed no enlargemant, but the spleen was decidedly enlarged extending below the umbilicus almost down to the pelvic crest There was no change in any other organ. The lymphatic system was not enlarged in any part. There was no enlarge- of the thyroid or the axillary glands or the glans in the groin. The patient had occasional diarrhœal attacks. Examination of the blood on 10th October, gave red blood corpuscles 2,347,000; whites, 13,511. Examination of urine gave sp. gr. 1035; no albumen; no sugar; no bile, although there was decided jaundice affecting the skin. The spleen has gradually got smaller until it is now decidedly smaller than it was three months ago. At the present time the blood count shows—reds, 3,000,000; whites, 20,000,000. Persistence of the analinia ir more prominent at some times than others. Dr. Thistle stated he had arrived at his diagnosis by excluding leukaemia, Hodgkin's disease and pernicious ana-mia. He exhibited charts showing the very decided decrease in size of the spleen since the admission of the patient to the Sick Children's Hospital. The treatment consisted in the administration of intestinal antiseptics, large doses of bismuth and small doses of salal combined and the exhibition also of arsenic with tr chloride of iron. Bone marrow had been tried but did not agree with the patient. There was elevation of temperature constantly so that it has been up and down above 99°, instead of following the normal line.

Drs. Fenton, Rudolf and Parsons discussed the case.

ABDOMINAL TUMOR.—R. J. Dwyer. Dr. Dwyer read notes of his case, after which the patient was laid on the table and examined by the Fellows. The patient is a woman aged thirty-five years, married born in Canada Father died at eighty-five years; mother at fifty-eight—"dropsy." Brothers and sisters living, strong and healthy. Children, eight, two still-born. Patient has had the general complaints of childhood Menstruation has always been regular. There has been no stomach trouble at any time previous to the present illness. She is not robust,

but has worked hard up to the present time. The first indication of her present trouble appeared last September. There were pains in the stomach, passing downwards towards the pelvis. These gradually increased in severity until November when vomiting commenced. They were relieved by a drink of water. The pains also caused the patient to feel hungry: whilst often there was a feeling of vomiting without any vomiting being present. By Christmas time, the patient was unable to keep anything on her stomach. Occasionally a light meal will stay down for half a day. A test breakfast was rejected at once. In the vomited matter there was an abundance of mucus, a considerable quantity of lactic acid but no Hcl. The patient presents the appearance of one weak and wasted. There is a marked fullness in the epigastric region. Notwithstanding her emaciated appearance she has not the cachectic look one would expect in cancer and her age is against it.

Dr. Grasett in discussing the case did not think the age excluded malignancy though it occurred most often in advanced life.

Dr. Nevitt said it appeared to be a cancerous growth in the wall of the stomach. Its nodular appearance, its close proximity to the abdominal wall and the escape of gas on pressure, all seem to point to the location in the wall of the stomach.

Replying, Dr. Dwyer enlarged upon his notes. He pointed out too distinct points at which gurgling could be obtained. There was no dilatation of the stomach present. When the patient takes a full breath you get dullness at the upper border of the growth and above that you get the stomach resonance. There are one or two nodules present. Dr. Dwyer thinks it probable that she had an ulcer of the stomach and peritonites; or a tubercular peritonites. The appearance of the tumor would suggest to him a thickened omentum and possibly transverse colon beneath. As regards the age of the patient bearing on cancer, there have been twenty-six cases of cancer of the stomach in St. Michael's hospital and only one occurred under fifty years of age.

RHINOLITH WITH NOTES.—Dr. Chas. Trow showed this specimen removed from a girl nineteen years old. There was at first a considerable discharge from the left nostril with some slight pain increased on pressure externally; and headache. On examination of the nose found middle turbinated thicking and the rhinolith exhibited which had to be broken up in removal. The part after removal was cleaned with Seiler's solution and iodal insufflated. The swelling on the outer part of the nose gradually disappeared. These nasal calculi are supposed to be formed by some foreign body becoming impacted in the nostril. As a rule they are met with singly in adults and are generally of an irregular ovoid form, in size varying from that of a millet seed to an almond kernel, and weighing up as high as two ounces. There was also much lachrymation before the operation and a high temperature afterwards.

DUCT CARCINOMA OF THE BREAST.—Dr. H. A. Bruce showed this specimen, the section having been taken through the nipple. His notes of the case are as follows: Patient sixty-one years old. None of her

relatives were known to have cancer. The affection of the breast was first noticed a year ago. There was dull aching pain in the left nipple on retiring one night. After that she never suffered from pain again. Then a small lump beneath the nipple was noticed, which gradually increased in size. The breast gave sensation of weight but no pain present. The nipple was slightly retracted, and the skin immediately surrounding the nipple was adherent to the mass beneath. The growth measured four inches in diameter and surrounds the nipple equally in all directions. High up in the axilla, three enlarged glands could easily be felt. The operation was performed with solution of cocaine, (P. D. & Co's tablets, morphine gr. ¼, cocaine gr. 1 and common salt) and the entire breast was removed, a drainage tube being placed in the axillary end of the incisior. Duct cancer is an exceedingly rare form of the disease. The nipple is usually not retracted but in this case it was to a slight degree. The disease commences as a malignant papilloma. Into the ducts simple bacillary growths project. These increase and cause discharge from the nipple. The bacillary projections are composed of epithelium.

MALIGNANT DISEASE OF BREAST.—Dr. George A. Bingham exhibited two gross specimens removed from patients aged forty-five and thirty-two years respectively. In the first case there was absolutely no pain whatever and no retraction of the nipple. A nodular mass was felt below the nipple line with enlarged glands in the corresponding axillary. The growth was of five months duration. In the second case the period of growth was six months. There was a considerable amount of pain and much trouble from the beginning In case No. 1 the growth was found to be firmly adherent to the pectoralis major, therefore, in operating, Dr. Bingham removed the lower part of this muscle and also had the glands of the exilla thoroughly cleaned out on account of their being very much involved. He did not touch the pectoralis minor. In No. 2 the same operation was performed. The point he would like to hear discussed was the advisability of removing the pectoral muscles. He was entirely prepared to say that we should remove the pectoralis major in all cases in which an operation was done. In all cases where we have malignant disease of the breast we may have affection of the axillary spaces without any evidence of adhesion. An interesting feature to note was that under the microscope, the pathologist failed entirely to discover any trace of malignant disease in one case. Another point in reference to the method of removal which he thought of some interest, one should attempt to remove as far as possible the muscular layer and the growth in one mass without separation and as far as possible without cutting into the diseased tissue at any point.

Drs. Pepler, Primrose and Wm. Oldright discussed the case.

GEORGE ELLIOTT,

Rec. Sec'y

CORPULENCE AND THE FATTY HEART, WITH CASES.

BY THOMAS E. SATTERTHWAITE, M.D.
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Corpulence and the fatty heart are so closely related that a consideration of one involves the other, Chambers found that in thirty-six corpulent people twelve had fatty hearts, while Quain's observations were that patients with fatty hearts were invariably corpulent. We may therefore infer that corpulence disposes to fatty heart. Probably the one is essential to the other. The term fatty heart means merely that the heart is burdened by an excessive deposit of fat, not that it has undergone fatty degeneration. The fatty heart is said to be in a condition of infiltration, pathologically speaking. Fatty degeneration of the heart is a more dangerous affection, but it may be a sequel to fatty infiltration. If they co-exist, which sometimes happens, the prognosis is vastly worse.

Corpulence or obesity consists in an excessive deposit of adipose tissue in parts of the body that in health are comparatively free from fat. It is caused essentially by nutritive disturbances; or to put it in another way, it is the result of a loss of equilibrium between assimilation and dissimilation.

Obesity is a serious matter in many ways. First of all, it is a posiive discomfort to the patient, for locomotion is made difficult, digestion is disturbed, and the faculties are often dulled. Obese people, too, have a constant tendency to constitutional disorders, such as gout, rheumatism and diabetes. There is also the everpresent danger of some serious illness, accident or surgical operation, which they may not be able to survive, as corpulent people are deficient in vital power. Fat infants and children seldom, in my experience, reach adult life, while in advancing years the obese may be totally unable to go about. Miles Darden, whose height was seven feet six inches, and weighed over a thousand pounds, had to be transported in a wagon during the last four years of his life. And corpulence may be a disturbing factor in social life. It is said that in Albania, corpulence in the male, may be a proper ground for divorce.

Excessive weight has been treated successfully from very early times, the Greeks employing trained men to reduce their athletes, but corpulence as a disease was not plainly shown until the present century, when English physicians such as Wadd (in 1825), F. Harvey (in 1864), Chambers (in 1850), and Quain (in 1880-1885), wrote up the subject Harvey was the physician of Banting, and his method, known as the Banting-system, became widely known and was extensively practiced.

Adipose tissue is chiefly stored in the subcutaneous connective tissue, beneath the serous membranes, or in the intermuscular septa. The largest deposits are beaneath the skin of the abdomen, in the mesentery, on the buttocks and thighs, and in the back of the neck. In women the excess of fat is usually in the thighs and buttocks. A certain amount of fat is normally contained in the connective tissue corpuscles, in the form

of minute specks. According to Michael Foster, these specks coalesce into droblets, these again into drops, until, as the protoplasm of the corpuscles diminishes and the oil globules unite, the original connective tissue corpuscle is converted into a fat cell. The remnant of the protoplasm is then gathered about the nuscleus. To a moderate extent, fat tissue is natural as it is a normal constituent of the system. And within physiological lines ordinary fat tissue may be increased so as to subserve a useful purpose, constituting a reserve store upon which the body may draw for nutriment in periods of prolonged vital strain.

But obesity has a progressive tendency, for as the bodily weight increases, and with it the dyspnoea and palpitation which necessarily follow exertion, there is a further hindrance to the oxidation of the blood, which is still more increased when the heart becomes involved in the fatty deposit. Corpulence also begets plethora, and it in turn hemorrhoids, varicose veins, haemorrhages vertigo, headache, disturbance of sight and hearing, dulness of the intellect and dyspepsia, all of which may be attributable to passive congestions. But it must not be supposed that all corpulent people are so affected. Sam Johnson, the author of Rasselas, and David Hume, the historian, were corpulent, but led, for the most part, intensely active intellectual lives, notwithstanding this malady. Obesity may occur at all ages. I have seen it in infants under one year. On a number of occasions I have ascribed it to a surfeit from artificial feeding with food containing too much cream, or a superabundance of starchy material. In two instances (see Cases 1 and 2) the deficient oxidation of the tissues is shown by diminution in the normal percentage of urea, as shown in the urine, and as well as by the actual diminution of the urea. Both of these patients were lithaemic, as the diminution in the excretions of urea would indicate. Lack of exercise, too much sleep and a secluded life also tend to corpulence. The obesity of some women of the East is explained by Charles Robin, on the ground that they take little exercise, eat all day long and sleep a great deal. Obesity is also hereditary. White races that live in a low, cool and moist climate are specially prone to it. Drinking any liquor to excess also excites to corpulence. Fermented liquors and the alcoholics are special causes But overeating will do it. Most persons eat more than is good for them. Persons who drink water in excessive quantities are usually corpulent, especially if they drink much at their meals, perhaps because the increased amount of water interferes with digestion and assimilation. Besides if the gastric juice is diluted, the blood is made more liquid and the red corpuscles may be dissolved, in a measure.

Fat tissue appears to be formed chiefly from the carbo-hydrates; also from the surplus carbon of the proteids or albuminoids; and from pure fat taken as food, and from water or other liquids. Some authors hold that fat taken as food does not make fat tissue. Ebstein, of Gottingen, maintains this view. The truth appears to be that when fat (or albuminoids) in small quantities are eaten, no fat is stored up, but when the fatty food (and albuminoids as well) are increased to a point where the carbon no longer burned, it is retained in the system as fat.

We are not very fully informed as to the condition of the corpulent after death I, myself, never gave the matter much attention, although I have made a good many post-mortems on corpulent people. But after death the tissues of the corpulent are apt to be soft and flacid, and decomposition ensues rapidly. In a case which occurred in my pathological service, in St. Luke's Hospital, where death was sudden in a man only thirty-three years of age, the left ventricle was found hypetrophied; there was oedema of the lungs; the spleen was large and soft; the liver was fatty; while the liver, kidneys and portions of the stomach were congested.

The diagnosis of corpulence is simple, but it is generally admitted that the presence of a fatty heart cannot be positively determined by physical signs. It is a matter of inference, but most agree with Quain, that where the pulse is small and week, the first sound of the heart feeble; and the impulse weak, the heart's area enlarged and the patient corpulent, it may be maintained that the heart is fatty. Henry Kennedy, of Dublin, in opposition to Quain, bases his diagnosis on a large full pulse, not increased in frequency, an enlarged area of heart dullness, possibly a soft systolic murmur over the aorta with the first sound. In my experience a fatty heart is often accompanied by valvular lesions, and I think that my experience will be found borne out by a study of reported cases. Hence it is that Kennedy may have found a full pulse due to valvular lesions in his cases. In this connection, however, I ought to say that during the treatment for fatty heart, previous murmurs will sometimes disappear, a fact also indicating to mind that these particular murmurs have probably been due to a relaxed condition of the heart chambers and not to an organic valvular disease.

Obesity is a disease that can be successfully treated in most cases, if the patient has a fair amount of vitality; and even in the feeble the dangers attendant on a scientific course of treatment are small as compared with the risks of neglecting such treatment. According to Maccary, as quoted by Worthington in his excellent Thèse de Paris (1875), the methods of the ancients comprised venesection, the use of purgatives, exercises, friction, diet and stimulation of the several emunctories of the system. But these methods were probably not applied to the very young, the very old or the feeble. It seems hardly worth while to discuss the topic of venesection. Drugs, however, are still very extensively used. Liquor potassae was recommended by Chambers in 1850. The dose was from one-half drachm to one and one-half drachms. The theory of the action of this drug is that "it increases the vital power of metamorphosis by saponifying in part the fat contained in the blood, enabling it to be burned off as carbonic acid." It is no longer used, Probably no stomach could stand the use of it for any length of time. Its effect, if any, was to prevent digestion. In other words, it was one of the many "starvation cures."

Fowler's solution in five minim doses three times a day has been used. I have known it to be tried, but never with success. It is uncertain in action and may increase the weight.

Fucus vesiculosis, or bladder wrack, a species of seaweed, found in the Atlantic Ocean, was at one time used on account of the iodine and bromine it contains. It was given in a decoction of two to four drachms to the ounce. The taste is very offensive and the stomach is greatly irritated, so that gastric catarrh may be produced. But the kidneys are urged to great activity. Some have simplified this latter method by giving tincture of iodine in doses of two to four drops in a wineglass of lemon juice. But this treatment, it is said, also produces catarrh of the stomach.

Bromide of ammonium in doses of five to thirty grains per day has been recommended. It is unpleasant to the taste and irritating to the system in many ways. In line with this is the treatment by vinegar. It reduces the flesh but produces nervous disturbances. According to Brillat-Savarin (Worthington) it caused the death of a young girl of eighteen, who insisted on taking a wineglassfull every day.

The Banting method was at one time widely employed. Banting had tried the water of Leamington, Cheltenham and Harrogate, had taken plenty of outdoor exercise, of a vigorous kind, had tried Turkish and vapor baths, and liquor potassae as recommended by Chambers, but with no effect. His physician, Dr. F. Harvey, then put him on a regular diet which consisted of four meals a day. He took eleven to fourteen ounces of meat, game poultry or fish (pork and salmon excepted) tea without sugar, rusks and toast in small quantity, any vegetables except potato, four to seven glasses of claret and two or three ounces of fruit. Hot drinks of "grog" at night. But he is said to have been ordered a mysterious black draught on rising, the ingredients of which I have not been able to discover. On this system, kept up for something over a year, he fell from 202 to 156, losing forty-six pounds, or at the rate of three or four per month. The case as described by the patient is somewhat lacking in details from a medical point of view. The loss of weight per month was rather small—and the dietary, especially as to alcoholics, was very liberal to say the least.

The permanganate of potassa in doses of one-fourth to one grain before meals has been recommended by Bartholow. It is said, at any rate to relieve the acute gaseous-dyspepsia of the corpulent

Chambers' system consisted in a diet of two meals a day, active exercises, rubbing and salt baths, alkalies such as liquor potassae in doses of one-half drachm to one and a half drachms, purgatives and even bleeding.

The treatment at the baths of Marienbad, in Austria, Tarasp and Carlsbad, is due to the use of Glauber's salts, which reduce by causing watery discharges, but they are apt to be so violent in their action, owing to the very short time allowed for the treatment given, that they cause debility, palpitation and even chronic diarrhea.

According to Worthington, Trousseau's plan was to allow his patient lean meat, fresh vegetables, and fruit in their seasons, but to forbid him fat meat, butter oil and milk. The amount of bread and milk taken daily was to be diminished to a point as low as the vitality permitted. The

patient was to be weighed every two weeks, and he was expected to lose at the rate of one and one-half to three pounds per week. Exercises in the open air on foot or on horseback were ordered. In addition, he took baths containing five to six ounces of the bicarbonate of soda. The same drug was given internally to the extent of thirty grains per day.

The plan pursued by Ebstein, of Goettingen, is about as follows, the rules being modified somewhat according to the case :

1. Breakfast.—6.30 a.m., in summer and 7.30 in winter; large cup of black tea without milk or sugar. Two ounce white or brown bread. Plenty of butter.

2. Dinner.—2 p.m. Soup; four to six ounces of meat, with fat gravy, plenty of vegetables of all kinds excepting beets, carrots, turnips and potatoes. A little sweet fruit after dinner. Salad or stewed fruit. No sugar. Two or three glasses of light white wine. After dinner, a large cup of black tea. No milk or sugar.

3. Supper.—7 p.m. A cup of tea. One egg, ham fat—in fact any fat meat, sausage, smoked or fresh fish. Two ounces white bread, plenty of butter. Perhaps a little cheese, and a little fresh fruit. This diet to be kept up indefinitely after the cure is over.

Ebstein, as I have already stated, holds to an idea opposed by most, that the eating of fat does not produce fat.

Oertel, of Munich, has a somewhat similar plan, but prescribes a peculiar course of exercises, and sometimes resorts to violent diaphoretics. He restricts the amount of liquids and solids, limits carbohydrates and fats, orders prolonged walks in the summer season, increasing daily the distance and ascending greater and greater heights (Terrain cur.) In the winter he uses injections of the hydrochlorate of pilo-carpia in doses of one-third to one-fourth grains twice a week.

His dietary would be as follows :

Morning—Tea or coffee, four ounces with milk and sugar. Bread, two ounces (roll).

Mid-day—Beef, ten to twelve ounces : an egg. Vegetables, two or three ounces. Farinaceous food, one to five ounces. Fruit, three or four ounces. Salad, two ounces. Austria red wine, three to four ounces.

Afternoon—Coffee, four ounces with milk and sugar.

Evening—One to two soft boiled eggs, five ounces of meat or six ounces of game or fowl; one to two ounces of bread. Salad. Two to ten ounces of wine, Moselle preferred.

Oerfel's plan is to let the patient take daily thirty to forty ounces of water, three-fourths of an ounce to two ounces of fat, five to six ounces of albumen, and two to six ounces of carbohydrates.

Among the newer remedies recommended in this country is phytoline, the activa principle of the phytolacca decandra or pockberry, to be taken in ten drop doses before and after each meal. It is said to reduce without dieting at the rate of five to twenty pounds per month. The action is apparently on the subcutaneous fat, causing its absorption.

Thyroid extract has been extensively used. It is said to stimulate the skin. It produces emaciation, but often is poorly borne by the

stomach. The grape cure is another means of reducing flesh. The patient takes nothing but unfermented grape juice for several weeks. At first, he takes it in excessive quantities, then the amount is gradually reduced to the least amount compatible with vitality. Then it is increased. It is merely a sort of "starvation cure." The teas which are now widely advertised but whose ingredients are not know to the public, are composed chiefly of senna leaves, with a varying quantity of chelonia, couch grass and coriander seed. These teas act by causing the patient to have two or more very watery movements daily.

Dancel, the French surgeon, who wrote a treatise on obesity, in conjunction with Trousseau, used the hydrogogue scammony (the activity of scammony is due to its resin), of which the dose is five to ten grains. It is rarely used in this country for any purpose. At the same time he reduced the food and drink, but allowed the patient no active exercise.

There are many baths in Europe that are resorted to for the cure of corpulence. First in order of repute are the cold Glauber's salts waters of Marienbad, in Austria, and Tarasp in the Engadine. But if the patients are liable to be affected by cardiac difficulty, asthma or diarrhea, the hot Glauber's salt waters of Carlsbad are better, or the hot alkaline-muriatic waters of Ems, or the bicarbonate of soda waters of Vichy in France; or the alkaline-saline of Brides, on the Italian frontier. In mild cases patients are usually sent to take the saline waters of Kissingen or Homburg, But even these latter may prove to be too strong. I have a patient now under my charge, weighing 220 pounds, who lost fifty weight at Kissingen, but his nervous system was so deranged that he told me he felt "as if he would lose his mind."

Any effort to reduce the weight too rapidly, as often done at the continental spas, is apt to be harmful. It is not desirable to lose flesh too rapidiy, nor is it always well to reduce the weight to the standard as shown by our American tables. It is true that professional trainers can do it, but they have little weight to take off, and their subjects are men of exceptional vigor and physique. Corpulent people should not be treated in this way. It is said that De Graefe, in 1820 (Worthington) reduced a butcher from 363 to 150 pounds in nine months, but the man was a pugilist.

The object to be sought in reducing corpulent people is to take off the weight so that they are relieved from disturbances attendant on the malady, and to accomplish it by the means that are least calculated to disturb the equilibrium. There should be nothing disagreeable about such a course; on the contrary, the patient should enjoy it and feel as each week or month passes by that he is gradually returning to his normal state; and that his facilities are getting keener for the rational enjoyments of life. It is best at first to let the patient know that the course is often a long one. It may take several months, exceptionally, even a year or more. Banting's course took over a year, The patient should be mainly restricted as to food that contains sugar, starches and fats, for there can be no question that fat to some extent produces fat.

Oxidation should be increased by resistant exercises daily for an hour, and by baths that stimulate the skin, and so cause an improvement in the circulation. Enough water should be taken to bring the urea up to the normal amount excreted, but no more is necessary. Tea and coffee should be taken in moderation, because they appear to retard oxidation. Acid fruits and drinks should also be taken sparingly, because in excess they produce indigestion. Sometimes all fruit has to be forbidden. In general the small fruits may be taken in discretion in their season. Sometimes the amount of both liquids and solids has to be much reduced. Laxatives should be taken, if necessary, to produce full daily faecal movements, and stomachics if indigestion is acute. But the vitality of the patient should never be reduced. It should constantly increase. A patient under this treatment can be made to lose from four to ten pounds per month.

The following are illustrative cases.

CASE I.—*Corpulence; fatty heart, vortic obstruction murmur, mitral regurgitant murmur; oedema of extremities.*

Physician, 76, weight 357 lbs. Patient had been a corpulent man for many years, and had suffered recently from sub-acute rheumatism, and chronic eczema of the lower extremities. For several months he had been failing. Had constantly increasing dyspnœa and was unable to carry his great weight. He was wearing rubber bandages for his eczema and œdema, was taking arseniate of soda, and Arkansas Lithia Water. Pulse feeble and intermittent, usually absent in the left wrist. Impulse at the apex barely appreciable. Patient taking also tincture of digitalis, in ten minim doses three times day. Respiration after walking 32 to 44, panting and labored. Acute gaseous indigestion. Cannot walk half a block. Face pallid; apex outside nipple; murmer at apex, with first sound, carried round to the left; with first sound also; carried up great vessels. Urine five pints per day; no albumen, according to the last report. Patient was put on the modified Nauheim resistant exercise treatment with baths. At first the exercises were very mild, with lengthy intermissions. The baths at first were warm and salt; temp. 95°; duration five minutes. At the end of the second week they were carbonated and given immediately before bedtime. Digitalis stopped; sulphate of strychnia one-sixtieth of a grain three times a day; arsenic reduced in quantity. Examination of urine (by E. E. Smith, Ph. D.): Specific gravity 1020; trace of nucleo-albumen; urea 1.61 per cent., 8.34 grains to the fluid ounce; a few uric acid crystals; a moderate number of hyaline and a few epithelial casts; sugar absent

February 25th—Pulse 75 to 84. Respiration 20. Patient evidently better. Ordered Carlsbad Salts twice a week. Two meals only, with eight ounces of meat at each meal. Patient had previously accustomed himself to two meals a day. Weight now 350. Strychnia one-thirtieth of a grain three times a day. Arsenic stopped.

March 10th—Urine re-examined (E. E. Smith, Ph. D.). Sp gr. 1020. Indican; trace of albumen; no sugar; urea 1.55 per cent., 7.05 grs. urea to the ounce. Neutral. Mucus and pus, a trace. A few hyaline casts.

March 17th—Girth 60½ inches. Patient walks a little further each day. Temperature of bath 93°; seven to nine minutes.

March 23rd—Pulse has been ranging as follows: Before exercises, 81 to 88; after, 77 to 82; before the bath, 80 to 90; after, 80 to 86. Patient is drinking Londonderry Lithia Water.

April 2nd—Weight 343 lbs. Water five pints. Sp. gr. 1820. No albumen; slight phosphates.

April 20th—Pulse before exercises, 77 to 87; after, 76 to 79; 13 resistant movements daily, total duration 35 minutes. More force used. Takes now Carlsbad Salts, in larger doses, daily, causing two liquid movements. Milk is discontinued; in place of it Bethesda Water is substituted, with a little lemon juice to aid in satisfying thirst.

April 23d—Weight 338 lbs. Greatest girth 50½ inches. Takes no breakfast. In place of it a glass of hot water. Takes Apenta Water at breakfast time, sometimes followed by hot water. After two months' treatment the patient reported of himself as follows: "Two months' treatment shows a loss of nineteen pounds in weight, and a reduction of eight inches* in measure about the waist, with marked increase of strength and a greater freedom in breathing." Patient lost a little over six pounds per month.

May 2nd—Resistant exercises, thirty to thirty-five minutes. Carbonated baths have been gradually increased to full strength, but are now suspended.

May 7th—Has gained three pounds, and lost nothing in girth. Ordered baths again with one-half per cent. carbolic acid.

May 14th—Weight 332½ lbs. Lost six and one-half pounds in seven days. Bath now every other night.

May 26th—Gained two pounds last week. Rubber bandages now removed. Patient walks easily. Ordered to take only one meal per day for one day, and two meals on the alternate day.

June 4th—Weight 327½ lbs. Greatest girth 53½ inches. Patient has lost about three and one-half pounds a month.

June 11th—Patient going to the country, as directed, to take special resistant exercises daily. To take hot or cold water, one or two goblets with orange juice before breakfast. Then to take a hearty breakfast and a light supper. To eat only twelve ounces of meat, fish or fowl daily, avoiding starchy and sugary food. To eat sparingly of small fruits; to avoid fat in every form, including butter, milk and gravy.

In January, 1899, the patient reported that under this treatment his weight had fallen during the summer to 317 lbs—a loss of forty pounds. During all this time he attended daily to his professional routine of business while in the city, and made long trips out of town in consultation cases, where he was obliged from the necessity of the case to walk long distances in going to and from his train. Among the noteworthy features of this case is that, under the treatment, the eczema and oedema of the legs disappeared, not to return, and that he constantly gained strength, being able to do more professional work during the treatment than he had done for a long time previously.

* Should have been ten inches.

CASE II.—*Obesity; fatty heart; temporary diabetes.*

A lady, of about sixty-five, came to me in October, 1898. She weighed 181, was nervous and anæmic. Height 60¾ inches. Skin bathed in prespiration. Color dusky. Pulse 100 to 104. Weak impulse at the apex. Heart enlarged. No organic murmurs. Urine examination (by E. E. Smith, Ph. D.), sp. gr. 1027. Faint trace of sugar by several tests; no albumen. Urea 1.75 per cent., 7.95 grs. to the fluid ounce. A little pus. Few uric acid crystals. Moderately large quantity of hyaline casts.

October 29th—Second examination. Urine 60 oz. Sp. gr. 1018. Alkaline; no albumen. Sugar absent. Urea 2.28 per cent. 10.40 grs. to the fluid ounce. Pus absent. Moderate number of hyaline casts.

November 2nd—Ordered anti-lithæmic diet. Resistant exercises increased in number.

November 14th—Resistant exercises and massage. One-half per cent, carbonic acid bath, at 97°, five minutes. Girth 43 inches. Average pulse before exercises and bath, 90; after, 81.

November 22nd—Weight 178.

November 28th—Weight 177.

December 21st—Weight 171.

Treatment now stopped by an attack of influenza, the patient leaving town subsequently for a few days in the country. From a health resort where she has been in the habit of going, on January 24th, she reported, "the doctors here think me much improved." Loss of weight about five pounds a month.

CASE III.—*Obesity; spinal curvature; anemia; cardiac displacement.*

Miss M. H., 24, Havana, Cuba; a young lady of large build; height, 5 feet 6½ inches; weighing about 163 lbs.; came to me for treatment July 10th, 1898, wearing a spinal brace.

September 1st, 1898—On examination it was found she had, on standing, the usual lateral curve to the right in the dorsal region, with deviation of about one and a half inches from a straight line in the interscapular region, and deviation of one inch to the left in the lumbar region. Apex of heart outside of nipple one inch, and one and one-fourth inches below the extended intermammalary line. Patient given iron and strychnia, and the brace removed.

October 19th—One-half per cent. carbonated baths, given twice a week. Gymnastic exercises daily under direction. Massage and electricity to spinal region.

November 11th—Three-fourths per cent. carbonated baths once a week.

December 2nd—Under this treatment, continued for three months, though the course was interrupted by an attack of influenza, the spinal deformity was in a measure rectified so that the greatest deviation from the normal, on standing, was only three-fourths of an inch in the dorsal region and in the lumbar three-eights of an inch.

January 2nd—Apex three inches from the median line, and one from the intermammary line. The patient was now suddenly summoned to Havana. She lost about fifteen pounds in four months, a little less than four pounds a month.

CASE IV.—*Obesity; fatty heart; dyspepsia.*

A gentleman, weighing 237 lbs., height 5 feet 6 inches, came under my care in December, 1898. Pulse 100, no intermission. Apex beat feeble, difficult to locate, heart enlarged. Patient a smoker. Lithaemic. No organic murmurs heard. Pain at apex, giddiness of head, acute gaseus dyspepsia, and dyspnoea. Apex four and three-fourths inches from the median line, and three-fourth inch from the intermammary line.

December 28th—Dyspepsia and regurgitation. Under dermatol and Carlsbad salts, and anti-lithaemic diet, and abstention from smoking, these disappeared.

January 27th—Patient took the modified Nauheim course of resistant exercises and baths. Apex now four inches from the median line, and three-fourths inches from the intermammary line. Patient takes no medicine. Weight, 217 lbs., stripped. Had apparently lost about ten pounds in a month. Pulse 79 to 70 before exercising and baths, and 75 to 70 afterwards. Pulse is of better quality, dyspnoea has gone, and the patient was able to walk fifty-five blocks during the past week on a single day. "Post Graduate."

Two Cases of Primary New Growths of the Epiglottis.—Schiller (*Berliner Klin. Wochenschrift*, Nos. 41 and 42, 1898) reports two cases of primary malignant tumours of the epiglottis. It is curious that malignant disease should so seldom attack an organ so exposed to injury, but carcinoma of the epiglottis is rare, and sarcoma still more so.

(1) A nodular tumour of the epiglottis appeared in a man aged 62, and was at first taken for a sarcoma. This was removed by Czerny through an incision in the thyro-hyoid space, without a preliminary tracheotomy. A few months later a carcinomatous tumour was discovered on the left half of the tongue, with an infiltrated submaxillary gland. These were removed, tracheotomy being performed for œdema of the glottis. The patient recovered and was able to swallow soft solid food, though the prognosis, as regards recurrence, was still doubtful at the time of writing. It was not certain even after a microscopical examination of the tumour of the epiglottis whether it was a carcinoma or sarcoma or both. From a consideration of the whole course and anatomy of the disease the writer came to the provisional conclusion that a carcinoma developed from a pachydermatous thickening of the epiglottic epithelium, and caused a metastasis in the lymphatic glands of the same side, the carcinoma of the tongue which succeeded it being possibly an independent growth.

(2) A carcinomatous cauliflower excrescence grew from the epiglottis in a woman aged 61. It was removed, but the woman died of septic pneumonia, in spite of careful feeding with the œsophageal tube.

DIPHTHERIA ANTITOXIN BY THE MOUTH.

BY JOHN ZAHORSKY, A.B., M.D.

Assistant to the Chair of Pediatrics, Missouri Medical College; House Physician to the Bethesda Foundling Home, St. Louis.

Does diphtheria antitoxin enter the circulation when administered by the mouth? Roux has denied this. Escherich (*Wiener Klin. Wchschr.*, 1897, 799; *Pediatrics*, March 1, 1898) failed to detect it in the blood of infants after a dose had been given by the mouth. In fact, he takes occasion to warn clinicians not to rely on its use in this way as it is ineffective.

In the spring of 1897 (*New York Medical Journal*, March 19, 1898) I reported the results of its use by the mouth in a series of nine cases, all of which recovered. I also reported its use as a prophylactic measure in about forty cases in which there had been more or less exposure to the infection. In not a single instance did diphtheria supervene. While as a curative measure the administration *per os* presented certain defects, as an immunizing method it certainly seemed the more ideal; consequently, I urged that this method should receive the preference when prophylaxis was sought. This article has been widely quoted and, perhaps, has induced other physicians to use antitoxin by the mouth.

Yet Escherich asserts on the ground of animal experimentation that the antitoxin is not appropriated by the organism, when administered by the digestive tract.

Were my cases really only a fortunate series, which terminated favorably without antitoxin? While admitting that from a scientific standpoint the number of cases is insufficient to prove the curative effect; nevertheless, the promptness of cure after two days, convinced me that the serum is absorbed. More conclusive in the demonstration are the results in the large number of cases immunized. In several families the children were compelled to remain in the same room with the patient, and yet none contracted the disease. Since the publication of this report, I have used this method of immunizing infants in an additional fourteen cases in private practice, and one hundred and fifty infants in the Bethesda Foundling Home. Twice in this institution, after an outbreak of diphtheria among the inmates, the little patients were given antitoxin or antitoxic milk by the digestive tract, and yet none contracted diphtheria. An apparent exception took place, but it was shown that the baby vomited the antitoxic milk. Clinically, therefore, it seems demonstrated that antitoxin can be absorbed by the digestive tract. But we have biological tests to support this view.

Fisch (*New York Medical Journal*, April 9, 1898) after a large number of experiments on animals, concludes that the antitoxin reappears after twenty-four to twenty-six hours. To quote his own words: "It has, therefore, been established that while after twenty-four or thirty-six hours nearly the whole amount of antitoxin can be recovered from the blood, when the antitoxin has been taken by the mouth, after five, six, nine and eleven hours nothing, or very little of it can be found."

Escherich surmised that the gastric juice probably destroys the antitoxin, but Fisch has shown that artificial gastric juice does not modify its action. Four puppies each received a lethal dose of diphtheria antitoxin; the first received at the the same time antitoxic milk by the mouth, the second received the milk twelve hours before the toxin, the third received the milk twelve hours after the toxin, the fourth received no milk. Animals three and four died in thirty-six hours, the second in ninety hours, and the first in sixty hours. The last two died rather of the effects of local necrosis. Experiments with kittens showed a more satisfactory result. Three kittens out of five were saved, and in these the milk and antitoxin were given twelve, twenty-four and thirty-six hours before the toxin. When antitoxin and toxin were given at once the animal died. These experiments were multiplied, concerning which I refer to the original article, and there can be little doubt that after thirty-six hours the antitoxin is demonstrable in the blood, in both the old and young.

These facts, together with the clinical experience mentioned, certainly establish that antitoxin *per os* is absorbed after thirty-six hours, and, therefore, as a prophylactic measure is perfectly ineffective. I understand that Dr. Fisch is now engaged with another series of experiments on the same subject, the report of which we anxiously await. Why antitoxin does not at once enter the blood, is not known; neither do we know why when injected hypodermically it does not show its action for many hours.

It might be said that a small quantity of toxin enters with the serum and this immunizes; in fact, Hueppe has asserted that immunization is effected by the toxin rather than antitoxin.

It has been repeatedly demonstrated, however, that the toxin of diphtheria does not enter the circulation, and Nencki proved that the pancreatic juice destroyed it. We can, therefore not admit the assumption that the small quantity of diphtheria toxin caused the immunization after thirty-six hours. Possibly the antitoxin is retained in the liver or epithelial lining of the intestine. I shall continue to use antitoxin by the mouth as a prophylactic measure notwithstanding the experiments of Escherich.

The Cure of Cervical Lymphadenitis Without Scars.—Calot (*La Tribune Médicale*, October 26). Cervical lymphadenitis terminates more or less rapidly either in resolution or softening. Resolution is not rare. Softening is desirable, for it permits of cure without scar. Before the skin is altered the cold abscess should be punctured with a fine needle and a modifying injection used. 99 times out of 100 complete cure without scar will be obtained.

If after a period of six months, a year, or two years at the seaside the glands remains enlarged and hard, softening should be produced by an injection. The best is a 1 in 50 solution of chloride of zinc. Two or three grammes injected three or four times at intervals of two days almost constantly produces softening. The treatment is completed by puncture and injections of camphorated naphthol.

A cutting operation is necessary only when ulceration has occurred.

RELATION OF CHOREA TO RHEUMATISM.

A continuation of the Discussion on Acute Articular Rheumatism before the Chicago Society of Interna Medicine, Feb. 23, 1899.

BY ROBERT B. PREBLE, A.B., M.D., CHICAGO.

The subject of the relation existing between chorea and rheumatism has been frequently discussed during the greater part of the last hundred years; but as yet no definite conclusion has been reached, and none can be reached so long as we remain in ignorance of the exact etiology and pathology of the two diseases. What the relation is we can not know as yet, but I believe that to-day almost all will agree that there is a relation. We must, however, carefully avoid the error of Billiet and Barthez, Joffroy, Graves and Sturges, who believe that all cases of chorea are of rheumatic origin. Starting then, with the confession that we have no facts to prove the nature of the relation, let us see what evidence there is to prove that there is a relation.

In the first place, how common is rheumatism in children? I have not been able to find much definite information upon this point. Coutts at the East London Hospital for Children, found that 16 per cent. of 168 consecutive cases had had rheumatism. Donkin states that 18 per cent. of hospital cases taken at random are rheumatic. These statements are surprising, even when due allowance is made for the greater frequency of rheumatism in England, and are more remarkable when we recall the statement of Senator, in "Ziemssen's System," that the morbidity of acute articular rheumatism is 11.5 per cent. for London. If we accept the astonishing figure of 11.5 per cent., a figure certainly far beyond the averge for the world, we must remember that this is for all ages, and according to the statistics of the Committee of the British Medical Society for the investigation of acute rheumatism, only 6 per cent. of rheumatics are under 10 years of age; in other words, something less than 1 per cent. of children in general suffer from rheumatism. I fully realize that this method of calculation is crude and liable to many errors, but I believe that the result is not far from average experience. Sée states that in 11,500 cases admitted to the Children's Hospital in Paris, 48 had simple rheumatism, and 61 rheumatism combined with chorea, i. e.; less than 1 per cent. were rheumatic, and more than half of the rheumatics had chorea.

Next, what proportion of cases of chorea have had rheumatism? The statistics vary widely, ranging from those of Hughes and Brown, who found only 15 of 104 cases of chorea without a distinct rheumatic history, to those of Steiner, who found only 4 cases of rheumatism in 252 cases of chorea. Sturges admits that 42, i. e., 20 per cent., of his 219 cases of chorea had had rheumatism; Donkin that 28, i. e., 27 per cent., of 104 cases were rheumatic. Both these authors place the frequency of rheumatism in children at from 15 to 18 per cent.

I have added the statistics of Hughes Brown, Sée, West, Ziemssen, Steiner, Ogle, Koch, Mackenzie, Sturges and Donkin, making in all 1838

cases of chorea, with 381 cases of rheumatism, i. e., 20.16 per cent. Other authors, Henoch, for example, state that one-third of the cases of chorea are related to rheumatism. If our first conclusion, that 1 per cent. of children in general suffer from rheumatism, is correct, we must assume that chorea and rheumatism have some relation, when we find that 20 per cent of choreic children have had rheumatism.

It would be interesting to know what percentage of rheumatics subsequently develop chorea, but there are not, so far as I know, any statistics bearing upon this point. Meyer, Rufz, Sée and Osnann state that about 0.66 per cent of the cases treated by them have chorea. We may add to this the definite statement of Sée that he found 43 cases of simple rheumatism to 61 cases of rheumatism combined with chorea.

In 1893 Lewis presented a careful report upon the seasonal relation of corea and rheumatism, based upon 1383 separate attacks of chorea and 675 separate attacks of chorea and 675 separate attacks of rheumatism. His paper is illustrated with charts in which the curves for rheumatism and chorea run almost parallel, with the lowest point in November and the highest in March. This corresponds closely to the statement of Koch, who found 29 per cent. of cases in the first quarter of the year, 21 in the second, 13 in the third, and 37 in the fourth, while Wunderlich found 30 per cent of the rheumatism in the first quarter, 23 in the second, 18 in the third, and 28 in the fourth.

Before leaving the statistics, let us consider the percentage of rheumatic and non-rheumatic choreics which present endocarditis, starting with the statement that Whipman, in 655 cases of acute articular rheumatism, found 205 cases of endocarditis, i. e., 31 per cent. In the report of the British Committee upon chorea, it is stated that 141, i. e., 32 per cent. of the 439 cases included in the report had organic heart lesions. Of these 141 cases, 71 were associated with rheumatism. Of the 116 cases of chorea which were rheumatic 59 i. e., nearly 50 per cent had heart disease. Different authers make widely varying statements. Pye Smith reports 11 fatal cases of chorea, all with endocarditis; Rogers 71 cases, with 47 cases of simple endocarditis, 5 of pericarditis, and 19 endopericarditis; Kaulich 62 cases, with 12 of heart disease; Koch 153 cases of chorea, with 21 valvular defects. These statistics are unsatisfactory, as they do not enable us to separte the rheumatic from the non-rheumatic cases, Donkin makes a report attending to this point. He reports 33 cases of chorea without history of rheumatism, who presented heart murmurs during the course of the chorea. In 28 of these he has notes on the condition of the heart at the time of discharge, and finds that 13, i. e., nearly 50 per cent., showed murmurs. Unfortunately, his data are not sufficient to allow us to decide how many of these murmurs were organic and how many were functional, but allowing even half of them to be functional, we have left 25 per cent. of non-rheumatic choreics to contrast with 31 per cent. of rheumatics who develop endocarditis. That is, we have two diseases which present the same complication in about the same percentage.

Let us briefly review other complications and symptoms common to rheumatism and chorea. Both diseases show a great disposition to return, one attack creating a disposition rather than an immunity. Both show erythematous and urticarial eruptions. Both occur as complications or sequelæ of a large variety of diseases, especially those characterized by inflammations of the pharynx. Both are at times complicated by local suppurative processes.

Those who deny any relation between the two diseases base their opinions mainly upon the following points: They deny that the statistics show any greater frequency of rheumatism among choriec than among other children. They draw attention to the fact that chorea occurs mostly among children, while rheumatism is far more common among the adults, who rarely have the Sydenham chorea, and that chorea is about three times as common in females as in males, while rheumatism is somewhat more common in males. Others, as Billiet and Barthez, note that in certain places, as Genf, rheumatism is very common and chorea is rare. Leube and other authors draw attention to the fact that the salicylates promply affect rheumatism, but have no effect upon chorea, and that therefore, there can be no relation betwen the two. With this review of the evidence pro and con, let us see what suggestions we can find as to the nature of the relation between the two diseases.

A discussion of the relationship between rheumatism and chorea is so intimately connected with the etiology of chorea that one can not be considered independently of the other. There have been a variety of theories proposed to account for the symptoms of chorea, but we must not forget that all are theories. A historic and geographic study of these theories, if I may so express it, is interesting. Thus the embolic theory is an old one, and comes from the days of grosser pathology. The theory that chorea is a neurosis, a mysterious something based upon a degeneration or an inherited disposition, is urged by the French, who among the moderns are most fond of the mysterious. Lastly come the various modifications of the theory of infection or intoxication, which corresponds to the modern tendency to refer diseases to the direct or indirect action of micro-organisms. The embelic theory, which is urged by Ziemssen in his article on chorea, as practically the only theory, is declared by Gowers to have merely a historic interest There can be no doubt of the fact that we see choreiform movements as symptoms of organic lesions of the brain, but it is questionable whether these cases should be classed with the Sydenham or vulgar chorea. The embolic theory for the chorea demands the presence of an endocarditis to serve as a source of emboli, but clinically many cases of chorea are not accompanied by endocarditis, and the autopsies of a certain number of fatal cases of chorea show no endocarditis. Moreover, the examination of the brain in fatal cases of chorea shows no changes which can be referred to embolism. Endocarditis is far more frequent, even in adult than in child life, yet chorea in the adult is rare. This difference in frequency can be quite satisfactorily explained in another way, but any difference between an adult and a child which predisposes the latter to cerebral embolism, must be a

mechanic difference—and we know of no such difference—between the circulatory systems of adults and children. The same argument applies to the difference in the frequency of chorea in male and female children. Lastly, we may mention the pathologic facts that emboli when they occur are not often small and numerous, but are usually few and large, that they effect the kidney and spleen more often than they do the brain, that clinically chorea is not accompanied by symptoms pointing to embolism of other organs, and lastly, that the so-called malignant endocarditis, which so frequently gives rise to embolism, is rarely accompanied by chorea. I believe we may safely dismiss this theory from our minds.

The neurotic, the infectious and the intoxication theories of the origin of chorea are so interwoven that it is difficult, if not impossible, to discuss one without at the same time discussing the others. Thus we find that there are no demonstrable structural changes in the brains of patients dying with chorea; the chorea presents, then, one of the most important characteristics of the functional neuroses. Like hysteria, chores may appear suddenly after a physical or psychic trauma in an individual previously apparently normal. Most of the cases of chorea are in the female the sex most liable to suffer from the neuroses. There is also some evidence that children of neurotic parentage are more frequently subject to chorea. However, Koch, who attended to this point especially, found that in 80 per cent. of his cases that was no neurotic taint.

Joffroy calls chorea a cerebrospinal neurosis of development, *néurose eérébro-spinal d'évolution*, an abnormal development of the motor apparatus occupying the same relation to the nervous system which clorosis does to the circulatory system. He considers the choreic a degenerate, in whom the malformation of the motor appartus remains latent until some precipitating cause makes it manifest. Such precipitating cause may be an infectious disease, such as rheumatism, pneumonia or typhoid. He regards the joint changes seen in chorea as arthropathies similar to those seen with myelitis, and of undoubted spinal origin. Charcot regarded the frequent association of joint changes and chorea in the same individual or in individuals of the same family as another manifestation of the relationship between diseases of the nervous system and of the joints, to which he more than any other drew attention. I do not at all believe that Joffroy is correct in calling the joint manifestations of chorea arthropathies of spinal origin, but we must assume that there is some difference in the nervous apparatus of young girls especially, which render them liable to chorea whenever any of the immediate exciting causes come into play.

The features common to the neurotic, infectious and intoxication theories of chorea is that the function of the nerve-cells is altered without their being any structural changes demonstrable by any known method of study; the "moving equilibrium" of the cells is disturbed, but not destroyed. We can imagine that such disturbance of the equilibrium may be excited by a wide variety of causes. For example, such disturbances may be due to physical or psychic trauma, and there can be

no doubt of the clinical fact that chorea does develop so immediately after trauma that we must believe the trauma the cause. Koch found a psychic trauma stated as the immediate cause of chorea in 35 of 66 cases. Mackcnzie found that in 44 of 98 cases referred to fright the chorea developed within one week.

I believe that in the majority of the cases, however, the disturbing factor is more tangible than a psychic trauma. An individual predisposed by age, sex, or other unknown causes acquires some infective process. Various toxic bodies resulting from the bacterial activity are absorbed, and, acting probably upon the cells of the motor area, excite a chorea. Here also, the changes in the cells are not structural. but are nutritional or functional. Dana, Duckworth, Marfan, Koch and others express the opinion that chorea is due to the action of toxins resulting, not from a specific infection, but from a wide variety of bacteria. It is a well-established clinical fact that chorea occurs either as a complication or sequel of a wide variety of infectious diseases—rheumatism, whooping-cough, scarlet fever, measles, smallpox, typhoid, influenza, gonorrhea and others. It is not so generally known that chorea may bear the same relation to more localized infective processes, such as otitis media, furunculosis, dental periostitis and impetigo. Marfan found in 46 cases of chorea not postrheumatic, 28 cases almost immediately following some local or general infective process. In 19 cases he could get no history of any antecedent infection or hereditary taint but states that these cases were mostly hospital cases, with incomplete histories. Marfan claims that almost 50 per cent of cases of chorea have had rheumatism. All these diseases are of undoubted bacterial origin, some due to well-known bacteria, such as the various pus cocci, the gonococci, the typhoid and influenza bacilli, others due to unknown bacteria. It is not likely that the chorea is due to direct action of these widely varying bacteria upon the nerve-cells: for usually the effects of direct microbic action are gross enough for detection, and moreover, if the bacteria acted directly they could be easily found in the nervous tissues. I believe we are justified in assuming that widely varying bacteria produce chorea indirectly by means of toxic bodies resulting from bacterial life. The action of toxins is less specific than that of bacteria themselves, and there are numerous well-known examples of the same effect due to toxins from widely varying and perfectly specific organisms. Furthermore, these toxins are often curiously selective in their action. Multiple neuritis is the best instance of a like effect following a wide variety of toxins. There is no acute or chronic infectious diseases which does not at times give rise to multiple neuritis, and there can be no reasonable doubt that this neuritis is the result of the action of toxins formed by the bacteria causing the disease. We know also that an exactly similar affection of the nerves frequently results from the action of toxic bodies which are much more tangible than the bacterial toxins—such bodies as alcohol, lead, mercury, arsenic.

Multiple neuritis will serve also as a common example of the selective action of toxins. What can be more definite than the distribution of the action of lead. We may, therefore, assume that chorea

example of a like effect from widely different toxic bodies, both bacterial and chemic. I may mention incidentally that chorea occurs sometimes as the effect of chronic mercurial poisoning. Why these bodies affect the nerve-cells of the motor area in certain individuals and do not do so in others is unknown to us, just as it is unknown why a typhoid fever in one case is followed by chorea and in another by neuritis. The special application of all this that rheumatism is an example of an infectious disease due to some yet unknown bacterium, which, more than any other organism, manufactures toxins which produce chorea by action upon the cells of the motor area. There seems to me to be no necessity, as there is no evidence, for the theory that chorea is a specific infectious disease due to a definite, though yet unknown organism. We may draw the following conclusions:

1. There certainly is some relation between chorea and rheumatism.

2. Rheumatism is much more frequent in children suffering from chorea than in children in general.

3. Rheumatism excites chorea by the selective actions of toxins upon the motor cells of the cortex, causing functional but not structural changes.

4. Rheumatism shares this relation to chorea with a great number of other infectious diseases.

Family Spastic Paraplegia.—In a recent number of the *Neurologisches Centralblatt* an abstract appears of an important paper on this subject by M. Lorraine of Paris. He gives a short account of "family" diseases of the nervous system. He points out that the lesions are often diffuse, not always affecting definite systems of fibres in the cord, and that transition forms are very numerous. Nervous and mental diseases, syphilis, alcoholism, relationship between father and mother. all predispose to family spastic paraplegia. It affects the sexes equally. Infectious diseases and traumatism seem occasionally to precede the manifestations of lateral sclerosis. The typical symptoms are spastic gait with increased reflexes and ankle clonus without sensory impairment or interference with the sphincters. Occasionally optic atrophy is observed. Rarely intelligence is defective. The course is usually one of gradually increasing interference with working power, and death is often the result of tuberculosis. The only necropsy has been reported by Strümpell, who found primary combined sclerosis of the pyramidal tracts, of the direct cerebellar tracts, and of the columns of Goll. The former were affected chiefly in the dorsal, the latter chiefly in the cervical, region. Myelitis, compression myelitis, spinal syphilis, and multiple sclerosis, are all to be distinguished, the principal differentiating features being the absence of sensory and sphincter impairment in family spastic paralysis and the family history. Hereditary cerebellar ataxy presents some features of similarity, but it is sufficiently distinguished by the ataxy of the gait. As to treatment, warm baths, massage, and rest are recommended, and in certain cases tenotomy, or even it is said neurotomy, may occasionally be useful.—*Lancet*, Dec. 3.

THE PREVENTION OF PREMATURE SENILITY.

The January and February, 1899, numbers of the *Centralblatt fuer die Gesammte Therapie* contain an abstract from an instructive article on the prevention of premature senility by Hermann Weber, which appeared in the *Zeitschr. fuer Diat. und Physik. Therapie*, Vol. 1. No. 1. The author points out that the longest possible preservation of the faculty of remaining bodily and mentally vigorous depends upon the proper nutrition of those organs that are most essential to life; especially the circulatory organs, from the heart down to the finest capillaries, veins and lymphatic vessels. When the fine vessels of the brain lose their energy, the nerve-cells degenerate and the most manifold manifestations of diminishing brain activity make their appearance. These manifestations are sometimes more pronounced in the sphere of thought, at others in the functions of the large ganglia at the base of the brain. In the same manner do the effects of the degeneration of the finer vessels of the heart, glands, stomach and bowels vary with regard to the functions that are most intensely disturbed. In paying attention to the preservation of the efficiency of the circulatory organs it is important to take into consideration the premature tendency of degeneration of certain systems of organs in families. It is necessary, therefore, to learn in each individual instances, the tendency of such degenerations in the parents and relatives. For there are many families in whose members the cerebral vessels degenerate relatively early in life especially as a result of atheromatous and kindred processes, which is the case in a more pronounced measure in males than in females. This is in many instances due to a too abundant supply of food, too little physical or mental exercise, or too much sleep; the latter being not rarely associated with a more than necessary food supply and sometimes the use of alcoholic beverages and the immoderate use of tobacco. The prevention of degenerative processes is accomplished by great moderation, plenty of physical exercise—diversified not monotonous—mental activity of fascinating interest, and, if possible, of an exhilarating nature.

Of great benefit to most persons, even those who have a regular calling, is the early cultivation of a pleasant occupation—a so-called "hobby," aside from the kind of work which is required for the purpose of earning a livelihood or similar duties. For circumstances may suddenly require the discontinuation of the activity connected with one's calling, and the creation of new interests at an advanced age is not possible for everybody, unless they have previously been cultivated. In England most soldiers are very frequently mustered out before they have reached their fiftieth year; those who occupy an office in civil life keep their positions a little longer, but many cannot remain in office after they have reached the age of sixty years. Also merchants, manufacturers, engineers and architects often retire from active work at this age. Among these classes an early senility, especially as regards the psychic functions, is very frequent, and when it is possible to create new interests the augmentation of physical and mental capacity is usually very great.

Very powerful factors are joy and hope. Sorrow and loss of hope create in some persons such a depression of spirits, that they become completely inactive and indifferent, and lose all interest in their surroundings. In several cases the author observed, after heavy losses, which acted like a "shock" or blow, that the action of the heart became weak and irregular, that in a short time dilatation of the heart and valvular murmurs developed, that gastric and intestinal activity almost ceased and edema appeared. In some cases lasting mental dullness and a kind of senile dementia supervened. In other cases death from a "broken heart" resulted within a few days or weeks. Deceased respiration and imperfect blood supply to the brain may be the main agencies resulting from the unfavorable influence of psychic depression. It is hardly possible to lay sufficient stress upon the influence of a depression of spirits, though an explanation of its exact action is not perfectly plain. It is an unmistakable fact that the *psyche* receives and executes the first impression, but the heart and circulation form the mechanical intermediate links in the chain of action; increased blood supply as a result of the exhilarating influences, as joyful mental activity, hope; decreased supply in consequence of the depressing influences, like sorrow, hopelessness and mental inactivity.

There are many families in which the heart itself is the cause of the beginning premature senility. In these cases treatment has to begin very early, if it is to be successful. As early as at the age of twenty years or sooner must such a tendency be counteracted; principally by systematic exercise of a diversified nature; walking on a ground with a moderately upward inclination is of paramount importance, especially according to the well known Oertel's system of *terrain* exercise, horseback riding, rowing and other physical passtimes. The proper measure of physical exercise must be adapted to each individual case. Not all passtimes are of equal value; those connected with sudden vehement motions are much less appropriate than the regular and longer continued exertions. Moderate cycling is also useful. Of particular value, however, for the purpose of strengthening the heart, are methodical respiratory movements, alternating with complete expirations.

In another class of persons, especially women whose nervous system becomes easily exhausted, help is fr quently very difficult. The strength of such persons must be spared in a high degree and the nutrition of their tissues and organs enhanced. Many individuals belonging to this class are improved or cured by Weir Mitchell's method. The author claims, however, to have frequently obtained favorable results without this "somewhat difficult" procedure.

An important system in maintaining for a long period of time the physical and mental energies is the digestive apparatus. In most persons a diminution of the digestive functions takes place after the sixtieth year, in many already after the fiftieth year or still sooner. With the beginning of the downward course of development the acquisition of new material by the tissues and with it the want for food becomes less. The taking of food must therefore be in harmony with these conditions, and

its nature must be more digestible and less irritating. With a great physical and mental activity a larger supply of food is tolerated. with a diminished activity and a large supply of food sooner or latter tissue changes of a diverse nature make their appearance. These may consist in a superabundance of fatty tissue, in a degeneration of the muscular fibres of the heart and of the blood vessels, in Bright's disease, rheumatism, gout, glycosuria. chronic catarrhs, etc, and these changes lead in a diversified manner to premature senility. After such pathological changes have taken place, but have not progressed very far, much may be accomplished by dietetic treatment, and the sooner this treatment is begun, the more success may be expected from it; but it is usually necessary, after a successful cure, to regulate the entire future life so as to counteract the tendency to these pathological changes.

The premature decay of the mental and physical functions is in many persons created by the immoderate indulgence in alcoholic beverages. There cannot be any doubt that for the majority of people a very moderate use of alcoholic drinks is not harmful and that for many individuals, who have a weak heart, the moderate use of alcohol is even useful and necessary; but most persons can very well do without alcohol and do well to avoid it entirely. Considering the frequency in many families of the hereditary element of alcoholism it is of importance in such cases to counteract at an early period of life the immoderate use of alcoholic beverages, or still better, to prohibit their use entirely. Smoking creates, in fat persons, weakness of digestion, of the heart, spinal cord, and brain, and, according to the author, it produces the complete picture of premature senility.

The theory that by abundant mental activity and physical exercise the span of life is abbreviated and that the measure of life-energy allotted to the individual is thereby sooner exhausted, the author considers to be incorrect.

Diminished power of resistance against meteorologic influences must also be taken into consideration. Cold, moisture, fogs and winds lead, in old persons, to all kinds of affections which rob them of their exercise in the open air, which in turn weakens the energy of their organs and favors the establishment of premature senility. If it is possible, therefore, old people should, during the winter, sojourn in mild climates where the noxious elements are present in an ameliorated degree.

The author's arguments are undoubtedly in harmony with physiological facts, and his views are not extreme ones on any points of this interesting and important subject, which teaches the art of growing old with the most possible retention and mental and physical vigor, with which is associated, of course, resistance against all kinds of disease aside from those pathological conditions which are peculiar to senility.

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Professeur à la Faculté de Médecine, Paris; Médecin honoraire des Hôpitaux; Membre de l' Académie de Médecine.

PARIS, 4th February, 1899.

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Its Action is Prompt; it stimulates the appetite and the digestion, it promotes assimilation, and it enters directly into the circulation with the food products.

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When prescribing the Syrup, please write "Syr. Hypophos. FELLOWS." As a further precaution, it is advisable to order in original bottles.

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is the condition of the woman who has been relieved from some functional disturbance to her state before relief. Don't you know, Doctor, that there are few cases that pay the physician so well as those of women—and the Doctor that relieves one woman, lays the foundation for many more such cases—all women talk and your patient will tell her friends. ASPAROLINE COMPOUND gives relief in all cases of functional disturbance—Leucorrhœa, Dysmenorrhœa, etc., and in the cases it does not cure it gives relief. We will send you enough ASPAROLINE COMPOUND—free—to treat one case.

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Recent Medical Therapeutics

Treatment of Pneumonia

As a rule certain diseases prove more fatal, not only in given districts but during certain periods of time, along particular areas of territory.

Twenty years ago, and preceding the appearance of La Grippe in its epidemic form, pneumonia proved as dangerous as it does at the present time. Medical men were at a loss, not for a remedy for the disease alone, but even for a logical line of treatment. The celebrated Dujardin-Beaumetz became so skeptical that he prescribed stimulants, regardless of therapeutical conditions. The mortality in his ward at the Hotel Dieu in Paris proved that his patients fared no worse than the others submitted to the antiphlogistic remedies then in vogue.

Codeine was considered the best remedy known possessing a marked and distinct effect upon the hypersecretions of the bronchial mucous membrane. What was desired was an analgesic possessing antipyretic properties which could be safely used. This has since been found in antikamnia which can be safely exhibited, especially on account of its not having a depressing effect on the cardiac system.

Doses of from five to ten grains of antikamnia administered under ordinary conditions do not develop any untoward after-effects. In the treatment of pneumonia, antikamnia is indicated as a necessary adjunct to codeine, on account of its analgesic and antipyretic properties and particularly because it acts as a tonic upon the nerve centres. The tablets of antikamnia and codeine containing four and three-quarter grains antikamnia and one-fourth grain sulphate of codeine present these two remedies in the most desirable form. One tablet every hour, allowed to dissolve slowly in the mouth, is almost a specific for the irritating cough so often met with in these complications. For general internal medication it is always best to crush the tablets.

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We are glad to know that the Antikamnia people take the precaution to state that when prompt effect is desired the Antikamnia Tablets should be crushed. It so frequently happens that certain unfavorable influences of the stomach may prevent the prompt solution of tablets, that this suggestion is well worth heeding. Antikamnia itself is tasteless, and the crushed tablet can be placed on the tongue and washed down with a swallow of water. Proprietors of other tablets would have had better success if they had given more thought to this question of prompt solubility. Antikamnia and its combinations in tablet form are great favorites of ours, not because of their convenience alone, but also because of their therapeutic effects.—*The Journal of Practical Medicine.*

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M. ft. Capsules No. xx, dry.
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℞ Antikamnia and Codeine Tablets ..... No xii
Sig.—Crush and take one every 2 or 3 hours.

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EDITORIAL.

SMALLPOX AND VACCINATION.

More than two months ago, the Commissioner of Health of Chicago, Dr. A. R. Reynolds, issued a warning sheet in respect to vaccination for meeting a possible invasion of the city by smallpox. Official reports, he said, record the recent invasion of nineteen States and sixty-three localities by the pestilence in this country alone, and the newspapers add daily to the number. Some of these localities are within a few hours' distance of Chicago, and it is not only possible that there are concealed or unrecognized cases of the disease in the city at the present time, but it is more than probable that persons from infected localities are daily riding in our street cars, associating with our citizens in public places, and even visiting in our homes

When the contagion becomes so wide-spread as it now is, it is obviously impossible to prevent its introduction into a new city like Chicago, with its numerous means of communication with the rest of the country. Sooner or later the disease is sure to find its way into the city by some unsuspected and unpreventable method.

Almost the same fear may be felt in respect to cities in Canada, and health authorities here should be prepared. To be forewarned should result in being forearmed.

In *The New York Medical Journal* of March 25th we read:—Outbreaks of small-pox have been reported from a great number of places, both in the United States and elsewhere, during the last few weeks, and some cases have occurred in New York.

There are now, April 1st, the secretary of the Provincial Board of Health, Dr. Bryce, reports, no places in Ontario in which smallpox is known to exist. Since the first of January however, Dr. Bryce states, there have been fourteen outbreaks and thirty-five cases of the disease, with seven deaths. There was no spread of the disease from anyone of the houses in which the outbreaks occurred, to any other house, which speaks well for the isolation measures.

Other outbreaks are liable at any time, and, as urged by the Chicago Commissioner in his circular, it devolves upon every citizen to see to it that he himself and those dependent upon him are thoroughly and promptly protected against this loathsome pestilence, Parents and guardians cannot escape the charge of blood-guiltiness if, failing to secure this protection for their charges, death follows an attack of smallpox—a disease of all diseases the most positively preventable. Employers and others having charge of wage-workers should give this matter attention, from pecuniary considerations if no other. Similarly as to railway employees, who are particularly exposed, and the employees of manufacturing establishments, department stores, etc.

Glycerinated vaccine may now be obtained at a very high standard of purity. That of Park, Davis & Co., it may be said, if not the best is not second to any. It is produced and put up under aseptic precautions not less stringent than those with which the modern surgeon surrounds an operation. Every parcel obtained from each animal is physiologically tested and the hermetically sealed capillary tubes effectually exclude germ contamination. In respect to the percentage of successful vaccinations, reports from those who have used it give excellent account.

It is, too, becoming well known that the proper use of reliable glycerinated vaccine gives rise to the miminum of discomfort and ensures the utmost freedom from danger of infection from the painfully "sore arms," unsightly scars and other troubles which have so commonly attended the use of vaccine "points."

Medical officers may well be on the alert.

PERSONAL.

Dr. Ernest Hall, of Victoria, B. C., paid the LANCET a visit on his way to Johns Hopkins Hospital, Baltimore; where he intends spending some time in special work and a general post-graduate course. The doctor speaks very confidently of the future of Victoria and is preparing himself to meet the increased wants of the inhabitants.

EDITORIAL NOTES.

THE HUNTERIAN ORATION: THEN AND NOW.—The Hunterian Oration, in 1899, delivered by Sir Wm. MacCormac, is pronounced a model. Doubtless it was. Nearly three-quarters of a century ago, in 1826, what was it? Sir Charles Bell, in a letter dated January the 9th of that year, describes it as follows:

"As to the Hunterian Oration, I know not what is to become of it. It is given in regular succession by the Seniors of the College. To-day, Sir Anthony Carlyle delivered it. I heard him at the public dinner of the Hospital boast what he would do. I saw the moment I entered that he would fail. He had a large volume of manuscript before him, suited to a course of lectures rather than to one discourse; and as many shell-fish as you see in an oyster shop; and he had the folly or the wit to make the *oyster* the subject of the Hunterian Oration. He began with a supercilious confidence, and, after many interruptions, finally broke down, after an hour and a quarter's delivery, amid the noise and hisses of the audience."

THE PRINCE OF WALES WAS PRESENT at the recent Hunterian Oration by Sir Wm. MacCormac, and in the evening dined with the members of the Royal College.

OYSTER FEVER? AND TYPHOID FEVER.—That oysters may in some way give rise to typical typhoid fever is now accepted as proved, J. W. Moore, M.D., in the Practitioner for March, endeavours to show by reports of clinical cases, that oyster poisoning may present itself under at least three forms: first, as an acute gastro-enteric catarrh; second, as a specific continued fever which is not typhoid, but probably due to ptomaine poisoning; and third, as true typhoid fever, by having acted as Eberths bacillus typhosus. Are these distinct conditions or diseases? or are they but caused by the different degrees of a ptomaine poisoning conveyed by morphological bacilli in different degrees of virulency or different physical conditions from their environment?

TETANUS, ANTITOXIN AND PHENOL.—The researches of Kitasato into the remarkable conditions, favorable or otherwise, to the development of the tetanus bacillus in the living human body showed that the infection of this disease is by no means a simple process. The uncertain results of the serum-therapy in respect to the disease suggest that the mutual reactions of the toxin and antitoxin are equally remarkable and complex. What does all this point to? Is it to the correctness of the present

general views of the "germ theory"? The practical point is that, it is now clear that much better results are obtained by the hypodermic injection of phenol (carbolic acid) than by the antitoxine. Zeri mentions 24 cases treated by this remedy, in Italy, France, Germany and Russia, without a fa lure. Arcoli has added ten more, with but one failure, and this before the treatment was well understood. Doses of 3 to 4 cg. of a 2 to 3 per cent. solution are given several times a day, and 35 cg. have been given in the 24 hours. If the patient's strength be kept up, the muscular spasms diminish in a marked degree.

HARD WATER AND THE TEETH: From the examination of the teeth of 20,000 Bavarian recruits annually, C. Rose has come to the conclusion that they are much the best in those districts where the water contained the largest amount of lime salts.

DIGITAXIN: The Editor of the University (of Pennsylvania) Magazine, after giving the experience of Masino, Vatin, Corin, Wenzel and others with this drug, says,—

It is evident, from the above testimony, that we have in digitoxin, if not a perfect substitute for digitalis, a remedy of great value, tolerably free from the untoward effects of the crude drug, convenient of administration, and one that may be used with great advantage when the liquor preparations of digitalis are not well borne. Digitoxin may be administered by the mouth, by the rectum, or hypodermically. The dose by the mouth is from $\frac{1}{125}$ to $\frac{1}{125}$ of a grain, twice daily, by the rectum $\frac{1}{125}$ to $\frac{1}{60}$ of a grain.

RESULTS OF COUSINS MARRYING.—Dr. John Angles has investigated the results of one hundred cases of marriage between cousins and one hundred where no relationship existed. The former showed a lower percentage of mental diseases and of sterile marriages. These figures are similar to those of Huths investigations.

SCHLEICHS MIXTURE FOR ANASTHESIA.—Schleichs believing that anasthetics are dangerous in proportion as their boiling points differ from the temperature of the body, recommended the mixture named below, the boiling point of which is 100° F., as giving good results; while Walter Lathrop, M. D. (Supt. Penn. State Hospital) states that Maduro, Mayer, Simpson, Delavan and many others have tried it and that the majority have been well pleased with its action while he himself has used it in 150 cases and the results have made him "a convert" to the mixture. It is as follows (Univ. Med. Stag., Mar. '99,) chloroform, 1½ oz., Sulphuric ether, 6 oz., Petroleum ether, ½ oz.

MATCHES WITHOUT PHOSPHORUS.—The Belgium Government some time ago offered a large prize to the inventor of a match that contained no phosphorous and gave off no poisonous gas. Two Berlin chemists have succeeded, it is said, in discovering a mixture for a match which fulfils these conditions, and that it is as inexpensive as that for ordinary matches. If this be confirmed it will prevent a vast amount of suffering from necrosis, and many lives now destroyed in match factories.

NEUROSES FROM PIANO PRACTICE.—Dr. Wartzold (in *Jour. d' Hyg.*) blames abuse of the piano practice for the chlorosis and neuroses from which so many young girls suffer. Girls, he says, should not be compelled to hammer on the keyboard before they are fifteen. He shows that of 1,000 studying the piano before the age of twelve, 600 were affected with nervous troubles; 200 of those who commenced at a later age and only 100 among those who did not touch the piano.

UNUSUAL CASE OF CONVULSIONS.—Fischer, in Pediatrics, reports a case of a child with convulsons, occurring every fifteen or twenty minutes for over four days, with high temperature and much thirst, "beginning from an overloaded stomach." The child recovered. Local depletion by leeches seemed markedly effectual.

RABIES.—The latest theory on this disease (*St. Petersb' Med. Woch.*) is that the dog secrets a poison like snake poison, and that the disease is not infectious in the ordinary way, but poisonous like a snake bite.

A PUBLIC HEALTH SCHOOL.—A bill is before the New York legislature, and has been reported favorably on, for a State School of Public Health, where free instruction shall be given to all members of local health boards. The bill provides for a laboratory for scientific investigations, milk, water and food analysis, etc.

CANADIAN COCOA.—Canadians may not be expected to buy and use Canadian manufactured articles when they are not as good as the foreign article, but when they are as good, or better, the reverse may be fairly expected. From personal knowledge we have reason to believe that there is no better—purer, stronger, more delicate of flavor, or less expensive, cocoa manufactured anywhere than the high grade article of the "Cowan Company," of Toronto.

HYGIENIC BISCUITS, so called, said to be very digestible, etc., are imported and advertised. It is very doubtful if there are any better or more digestible made than "Christie's Sweet Wine" biscuits. They are subjected to a very high temperature in the baking, by which the starch cells are well broken up, rendering them easy of solution in the stomach; and they are nutritious, of delicate flavor, and reasonable price.

OBITUARY.

DEATH OF DR. A. C. GAVILLER.—Archibald Charles Gaviller, M.D.C.M. Fell. Trin. Med. Coll., who resided at Grand Valley, Ont., died on Jan. 7th, 1899. He was much respected and deeply regretted by a wide circle of friends who knew him to be a man of no ordinary worth in every way. He was an exceptionally well qualified medical man. He graduated in 1882 at Trinity, and took the University Gold Medal, the highest honor of the year, as well as the 1st Silver Medal of Trinity Medical College, the Second Honor of this Medical College of the same year.

In addition to this some years after graduating he took at least two Post Graduate Courses, in New York, and had just before his death qualified himself fully as a specialist in Ophthalmological and Otological work. His death was due to overwork and exposure to the excessive heat in New York when there last summer for some months. He was only 41 years old at the time of his death. He was a nephew of Dr. Geikie, Dean of Trinity Medical College, Toronto.

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EUMETRA is introduced solely to the medical profession, and effective precautions are taken against its reaching the public, otherwise than through the physician's prescription. The containing box is provided with a device in the form of a label, which is a complete protection against repetition, except by the physician's direction.

A sample (full-sized) box, containing forty tablets, and descriptive literature will be sent on receipt of 10 cents in stamps.

EUMETRA PHARMACAL CO.,
Detroit, Michigan.

GONORRHEAL SEPTICEMIA AND ULCERATIVE ENDOCARDITIS.

The cardiac complications of gonorrhea are treated quite extensively in a recent contribution by Thayer and Lazear. The gonococcus has been shown to be capable of causing grave local as well as general septic complications. Cystitis, periurethral abscess, salpingitis and peritonitis, etc., have been quite clearly demonstrated to be caused by the gonococcus in a number of instances. The presence of the gonococcus in joints the seat of gonorrheal synovitis, has been demonstrated by many observers; it has also been obtained in pure culture from subcutaneous and other abscesses, from pleural effusions, and from the circulating blood (Thayer and Blumer, Thayer and Lazear). It would, therefore, not be remarkable that the gonococcus should be found as the cause of endocarditis and other inflammatory changes in connection with the heart.

Endocarditis is by far the most common of the cardiac complications of gonorrhea. Gurvich collected 110 clinical instances, in 77 of which the facts were stated clearly enough to allow of quite definite conclusions. Pericarditis seems to be much less frequent than endocarditis, Thayer and Lazear being able to find reliable records of 17 cases. They were also able to collect 32 instances of gonorrhea with fatal cardiac complications, 31 of which were instances of ulcerative endocarditis, with or without pericardial or myocardial changes, one case, that of Councilman, being an instance of peri- and myocarditis alone.

From a pathologic standpoint these cases of gonorrheal endocarditis may be considered in five classes: 1. Those instances in which the history shows the association of the process with gonorrhea, but in which there is no record of any bacteriologic examinations. 2. The cases of mixed or secondary infections, organisms other than the gonococci being obtained in pure culture, although in some cases organisms morphologically similar to gonococci were found. 3. Cases in which organisms possessing the morphologic and staining characteristics of gonococci were demonstrated to be present in the lesions, but in which cultures were not made. 4. A group of cases in which cultures made upon ordinary media remained sterile, while the microscope exaninations of the lesions showed organisms having the characteristics of gonococci. 5. The cases in which the purely gonococcal nature of the endocarditis may be considered as definitely proven by obtaining the gonococci in pure cultures, either during life or after death, and by demonstrating their presence in the lesions after death. There are only five cases recorded that may be placed in this group, in which the chain of evidence is complete. In one of these cases, viz., that of denharz, pure cultures of gonococci were obtained from the thrombi on the aortic valves, and the introduction of a piece of the softened thrombus into the human urethra gave rise to a characteristic gonorrhea, with gonococci in the discharge.

The anatomic lesions in those cases in which the purely gonococcal nature of the infection is probable or proven, corresponds to that of ulcerative endocarditis in general, with extensive polypoid fibrinous deposits,

and more or less actual destruction of the valves, often associated with the formation of valvular aneurysms and perforations.

There appears to be no particular relation between the time of the onset of the endocardial infection and the duration of the urethral involvement, some cases developing almost at once after the onset of the urethritis, others weeks or months later. Some cases occurred in the first attack of gonorrhea, others in persons who had suffered once or twice before. Arthritis preceded the cardiac complication in most of the cases, but in not a few the endocardial affection occurred without or before the articular symptoms.

The general symptoms of gonorrheal endocarditis differ in no essential from those of endocarditis of other origin. There is generally an irregularly intermittent or remittent fever, associated with severe chills, profuse sweating, marked anemia, and albuminuria. The duration of the attack, in the cases in which the purely gonococci nature of the infection seems probable, varied from ten days to six months. In Thayer and Lazear's case the septicemic symptoms persisted for six months.

It appears, then, that it is definitely established that an acute gonorrhea may be the starting point of a grave septicemia. with all its possible complications, the infections being either mixed or secondary, or purely gonococcal. During the course of this septicemia endocarditis may develop, and it may in some cases assume a rapidly fatal course, the symptoms being those of acute ulcerative endocarditis. The endocarditis of gonorrhea is not rarely due to the gonococcus alone, but may also be the result of a secondary or mixed infection.

Symptoms of Friedreich's Ataxy following Scarlet Fever.—Katz (*Deutsche Med. Wochenschrift*, No. 37, 1898) observed a case where, after scarlet fever, a girl aged 8 years developed complete paralysis of all her limbs. This gradually disappeared, but was replaced by ataxic symptoms simulating Friedreich's disease in everything but two points; one being that all the patient's sisters were healthy, and the family history was good, the other that the disease was not progressive; some of the symptoms, especially the nystagmus, having improved since its onset five years ago.

There were constant choreiform movements of one group of muscles after the other, made worse by movements, by standing or walking, but not by closing the eyes (no Romberg's sympton). The speech was nasal and "scanning," and the patellar reflexes were absent. There was no disturbance of sensation, paræsthesiæ, or pain, and the sphincters acted properly. Tabes dorsalis and chorea could be excluded with certainty. Ataxy has been observed not infrequently after acute infective diseases, but it has always been of a fugitive and purely functional character. In this case the disease had lasted for five years, and the nystagmus and loss of knee-jerks were opposed to hysteria.

THE ANTITOXIN TREATMENT OF DIPHTHERIA

There is little diversity of opinion as to the utility of the antitoxin treatment of diphtheria among those who have had the largest experience, and are thus entitled to a hearing. There is, however, not an inconsiderable body of the profession who, for one reason or another, think the subject still surrounded by doubt, and thus refrain from using a therapeutic agent whose claim to confidence has been incontestably established by the results of extensive clinical experience. To those who have not yet been convinced we commend for earnest consideration a masterly contribution to the literature of the antitoxin treatment of diphtheria by Goodall in the *British Medical Journal* for Jan. 28 and Feb. 4, 1899, in which is presented a judicial analysis of the subject in all its varied aspects.

A study of the figures shows that the case-mortality from diphtheria in London has fallen from 24.7 per cent. in 1894 to 17.4 per cent. in 1897 The reduction has, however, been much greater among the cases admitted to the hospitals of the Asylums Board than in the city at large, i. e., from 25 per cent. to 14.9 per cent., as against a reduction from 24.5 per cent. to 20.1 per cent. among cases not admitted. This difference becomes the more emphatic when it is borne in mind that the fatality of the hospital treated cases has usually been higher than that of cases not so treated. Not all of the cases of diphtheria received into the hospitals, however, were treated with antitoxin, but in 1897 this number reached 80.2 per cent. Many cases were admitted so late that no treatment could avail, and the hospital mortality is thus larger than it otherwise would be. The figures given are based upon the annual reports of the Statistical Committee of the Metropolitan Asylums Board. Corrected for errors in diagnosis they show a reduction in case-mortality from 30.4 per cent. in 1893 to 17.67 per cent. in 1897. In children under five years of age the reduction was proportionately even greater—from 53.3 per cent. to 24.9 per cent.

Among 3275 cases of laryngeal diphtheria seen at the Hospital Sainte Eugénie from 1854 to 1875 and at the hospitals of the Metropolitan Asylums Board, recovery occurred in 1008—33.8 per cent.; while among 745 cases from several sources not operated on recovery ensued in 335—44.9 per cent.; and among 8927 cases from numerous sources in which tracheotomy was performed, recovery took place in 2543—28.4 per cent. Since the introduction of the antitoxin treatment there were among 3486 cases of laryngeal diphtheria from various sources, 2522 recoveries—72.3 per cent.; among 1831 cases not operated on, 1471 recoveries—80.3 per cent., and among 2574 cases in which tracheotomy was performed, recoveries—63.4 per cent. All of these cases were treated with the antitoxin.

That laryngeal involvement is less common in cases treated with the antitoxin is shown by the fact that during 1894 among 3042 consecutive cases of diphtheria not treated with the antitoxin in the hospitals of the Asylums Board, laryngeal symptoms developed in 116—3.8 per cent,; while in 1895 (when 61.8 per cent. of the cases were treated with the antitoxin), laryngeal symptoms developed in 18 among 2695 cases—0.67

per cent.; and in 1896 (when 66.6 per cent. of the cases were treated with the antitoxin) laryngeal symptoms developed in 16 among 3300 cases—0.4 per cent. Further, among 412 cases in which diphtheria occurred as a complication of scarlet fever during the year 1896, and laryngeal symptoms were not present when the serum was injected, the larynx was invaded in 5—1.2 per cent.; while among 236 similar cases not treated with the serum, at any rate not until after the development of croup, the larynx was invaded in 36—16.6 per cent. Besides, there have been almost no cases for three years in which laryngeal obstruction arose after admission to the Eastern Hospital, where the antitoxin is injected immediately after entrance.

Among 131 fatal cases not treated with the antitoxin in 1894, death resulted from extension of the membrane along the respiratory tract in 22—16.7 per cent.; and from bronchopneumonia in 21—16 per cent.: while among 103 fatal cases treated with the antitoxin in 1896, and among 171 treated similarly in 1897, the number of deaths resulting from extension of the membrane was 3—2.9 per cent., and 5—2.9 per cent. respectively, and from bronchopneumonia 4—3.8 per cent., and 9—5.2 per cent respectively.

Of 1580 cases of diphtheria treated with the antitoxin in 1895, 1896 and 1897, 283 developed paralysis—18.2 per cent. In cases in which the serum was employed on the first day, this complication appeared among only 5.7 per cent.; in those in which the serum was used on the second day the paralysis appeared in 10.1 per cent. Only one case of severe paralysis occurred among the patients treated with the antitoxin on the first two days, and among these there was no death due to the complication. There were only 9 such cases with 3 deaths, among those treated within the first three days. On the other hand, there were 51 severe cases with 15 deaths among those not brought under treatment until the fourth day or later. Among 483 cases of post-scarlatinal diphtheria treated during 1896 in the hospitals of the Asylums Board, with the antitoxin, 34 became paralyzed—7 per cent.—as compared with 21.3 per cent. among similar cases admitted directly from the outside, but 413 of the cases—85.5 per cent.—were treated on the first two days. Only one of the 34 cases of paralysis terminated fatality. Among 452 cases treated in the Eastern Hospital during 1894, immediately before the introduction of the antitoxin, there were 49 cases of paralysis—10.8 per cent.; 5 of these were severe and four terminated fatally. A comparsion of the cases treated in 1892, 1893 and 1894 (without the antitoxin) with those treated in 1895, 1896 and 1897 (with the antitoxin) shows that those treated early with the antitoxin were less likely to develop paralysis than those treated early without the antitoxin, and that although paralysis was more frequent in cases treated with the antitoxin, the proportion fatal from this case was not essentially different in the two sets of cases.

The influence of early treatment is shown also in the fatality, as well as in the incidence of paralysis. Thus, in 1894, when the antitoxin was not used, among 133 cases admitted on the first day of the disease, 30 died—22.5 per cent. And among 539 admitted on the second day 146 died—27 per cent.; while among 143 treated with the antitoxin on the first day 7 died—4.5 per cent.—and among 809 treated on the second day

130 died—14.9 per cent. In 1897, among 66 cases treated on the first day, 1 died—1.5 per cent.—and among 317 treated on the second day 16 died—5 per cent.

In the cases of post-scarlatinal diphtheria the mortality between 1871 and 1894 varied in the different hospitals from 42.8 per cent. to 61.9 per cent.; while since the introduction of the antitoxin the mortality has varied from 5 per cent. to 25 per cent. in 1895, and from 4 to 5 per cent. in 1896 and 1897. Even if all of the mild cases are excluded and all the fatal cases are included, the mortality for 1896 would only be 20.1 per cent., and for 1897 only 15 per cent.

Finally, among the clinical evidences of the utility of the antitoxin are the inhibition of extension of existing membrane, and of the formation of fresh, while that which is present clears off more quickly than usual; the foul discharge that attends involvement of the nares soon ceases, and breathing and swallowing are rendered easier; the enlargment of the cervical glands and the inflammation of the tissues of the neck subside; the pulse-rate and the temperature fall; appetite returns; and the patient is still convalescent; while even in the fatal cases the last moments of life are made more tolerable.

In conclusion, Goodall expresses the sentiment that "few of even the most useful" of the agents of the pharmacopeia "have been subjected to the same fierce criticism as has the antitoxin of diphtheria, and still fewer have borne the ordeal as triumphantly, and from this there can be no dissent."

The results of this analysis show, as all the statistics tend to show, that as a direct outcome of the use of the antitoxin in the treatment of diphtheria, the mortality from the disease has been greatly reduced, both in the community at large and in the hospitals; that laryngeal and bronchopneumonic complications are less common and less fatal; that paralysis is more commonly observed (perhaps because more severe cases survive) though not more fatal; that the results are the better in all respects the earlier the treatment is instituted; that the clinical course of individual cases is rendered milder and more favorable; and that the antitoxin possesses distinct immunizing power.

A further illustration of the prophylatic value of the antitoxin is afforded by the experience of Allan, who relates, in *Treatment* for January 12, how in an institution accommodating sixty children a threatened epidemic was averted by timely immunizing injections. It appears that one of the children, while visiting a friend, was exposed to infection with diphtheria, and in returning home developed the disease and transmitted it to the girls in the beds on each side of her own. These three children were removed to a hospital, and no further cases appeared until after their return several weeks later, when five children in the same dormitory were attacked, On bacteriologic examination diphtheria bacilli were found in the throats of two of the earlier patients. During the following month several other children developed the clinical symptoms of diphtheria, and several more had inflamed throats without membrane. At this time a protective dose of antitoxin was given to all the children, from now on, although diphtheria bacilli persisted in the throats, there were no more cases of diphtheria or of sore throat.

EPITOME OF CURRENT MEDICAL LITERATURE.

SURGERY.

Anterior Metatarsalgia.—Whitman, M.D., (*Med. Record*, August 6).—This affection was first described in 1876, by Dr. T. G. Morton, of Philadelphia, and is characterised by recurrent pain about the fourth metatarso-phalangeal articulation, sharp and cramp-like in character. If not checked, it extends to the other joints and to the dorsum of the foot and legs. He supposes it to be due to pinching of the external plantar nerve or its interosseous fibres, by the adjoining fourth and fifth metatarsal bone. The mobility of the fifth and its shortness allow it to roll on and under the fourth metatarsal bone; the pressure on the nerve produces a neuritis. The chief causes are rupture of the transverse ligament and tight-fitting boots. The treatment adopted was removal of the head of the fourth metatarsal bone.

The affection is relatively uncommon in hospital practice; it is more common in females than in males. Of 84 cases, 64 were in females and 20 in males; the average age in 64 cases was 33 years.

The pain is usually felt only when a boot or shoe is worn, and is more or less constant when the foot is used. Sometimes the cramp is preceded by a sensation of something slipping or moving in the foot, and in such instances a similar snap also precedes the relief of the symptoms; removal of the shoe usually relieves the pain. There is generally a weakened and depressed anterior metatarsal arch, which predisposes to pain on lateral pressure. The foot is broadened and relaxed, or may appear normal, or there may be depression of both longitudinal and anterior arch. Where no deformity exists, abnormal mobility of the fifth metatarsal bone allows it to override the fourth, causing painful pressure when a tight boot is worn. In walking, elevating the heel increases lateral pressure, especially going down hill. Dr. Whitman thinks that it is the dorsal digital nerves that are compressed rather than the plantar. The chief causes are tight boots, injury, strains, and over-exertion.

As to treatment, the boot should have a low heel, a wide, thick sole, a well-fitting arch, and abundant room for the toes, the main object being to support the anterior arch. Sometimes benefit is obtained by having the inner sole arched upwards to sustain the foot in the normal position, or a pad of sole leather is fixed by adhesive plaster behind the head of the metatarsal bone of the affected joint. A properly fitting support, which may sustain the longitudinal arch as well, is best in some cases. The foot may be strengthened by exercises. Resection is rarely required.

Traumatic Axillary Aneurysm.—Alfred Willett, F.R.C.S. (*Practitioner*, December, p. 571).—A man aged 24 was stabbed in the right armpit with a pair of scissors. There was much bleeding which was stopped by pressure. When examined a month later a small scar was seen in the anterior fold of the axilla, and the hollow was almost filled by a hard

swelling with expansile pulsation. The swelling was diminished and the pulsation arrested by compression of the subclavian artery. A loud blowing murmur was heard. The right arm was smaller than the left, flabby, and nearly helpless. The fingers were semiflexed, and could not be extended nor abducted. Supination and pronation were weak, and there was marked wrist-drop. There was a numbness and tingling and some patches of hyperæsthesia in the area supplied by the ulnar nerve. The extensor muscles of the forearm, and those supplied by the ulnar nerve, gave the reaction of degeneration. There were no trophic changes in the skin such as would have resulted a month after division of the ulnar nerve.

The diagnosis of traumatic aneurysm was obvious But of what artery—axillary, or one of its branches? As the radial pulses showed no difference. and as there was no venous obstruction, it was concluded that a branch was affected. It was doubtful whether the nerve symptoms resulted from pressure of the aneurysm or tight bandaging at the time of the injury.

The patient was placed recumbent with his arm elevated. No change was noticed until the eleventh day, when the aneurysm was harder and the pulsation barely perceptible. The aneurysm was obliterated, and the nervous symptoms had diminished at the time of the last report.

Pathology and Therapeutics of Gonorrhœal Arthritis.—Loewenhardt (*Wien. Med. Presse.* November 6, 1898, col. 1777).—Gonorrhœal arthritis is not yet admitted by all as a specific disease, some writers still maintaining that it is only the accidental occurrence of rheumatism in a sufferer from gonorrhœa. The gonococcus has however frequently been found in the affected joints, and it is probable that failures to find it in other cases may have been due to defects in the technique employed in the search. This organism is an obligatory parasite; its toxines have been isolated, and an emulsion of dead bacteria has produced suppurative arthritis experimentally. Other manifestations beside joint affections may occur in the course of the disease, such as skin eruptions, endocarditis, retinal changes, and psychical disturbances, so that instead of a local ailment gonorrhœa in some cases comes to be a general disease ("Gonococcosis," D'Aubney). It may even occasionally prove directly fatal. The arthritis is distinguished from rheumatism by the nature of the changes in the joints, being characterised by only slight destruction, followed by an exaggerated reparatory process, with formation of granulation tissue leading to fibrous ankylosis. Relapse or reinfection is very liable to cause renewed joint affection, whereas an intercurrent attack of rheumatism or exposure to wet and cold does not have this effect. From osteo-arthritis it is distinguished by the absence of changes in the bones.

No drug can lay claim to act as a specific in this disease. Relief of pain is sometimes afforded by salicylate of soda, and iodide of potassium is occasionally useful, though it often fails. The same may be said of "oleum gaultheriæ," recommended by Taylor. The writer finds that salol and sandal wood oil administered in capsules give the best result. Of mercurial treatment he has had no experience. The affected joints

should be fixed on splints to secure absolute rest, but this treatment should not be continued longer than is absolutely necessary. It is advisable to draw off the fluid from the joint if it is much distended, and even arthrotomy may be practised. Later on massage is useful, and heat, applied by means of hot air or sandbags, is appreciated by the patient. In the former Härtel's apparatus is to be preferred.

A Curious Case of Phosphorus Necrosis.—A case of phosphorus necrosis apparently due to the inhalation of phosphorus fumes is recorded in a recent issue of *l'Odontologie*. The patient was a man, of good health, but addicted to the habit of excessive cigar-smoking, consuming about 20 cigars a day and using many matches to each one, as he frequently interrupted the smoking during his work. It was computed that for the last 20 years he had daily inhaled the vapour of phosphorus given off by over 100 matches. The early symptoms were pain in the right eye, with swelling involving the whole side of the face. Suppuration supervened and the pus obtained a free flow into the oral cavity. The patient's condition grew worse and the maxilla was eventually removed. A few months later a fresh operation was necessary, but he collapsed and died from meningitis. His teeth were in a deplorable condition, so that possibly the phosphorus acted through this medium as the cause of the necrosis.—*Lancet*, Nov. 26.

The Operative Treatment of Pulmonary Cavities. — Wiener (*Münchener Med. Wochenschrift*, October 18, 1898, p. 1351) describes a case of gangrene of the left lower lobe, which he treated by pneumotomy. He turned back a flap of skin and muscles eight inches long, and after resecting ribs rather freely, came upon the pleura. As the parietal and visceral layers were adherent he was able to proceed to the pneumotomy proper at once. With the knife of a Paquelin's cautery he penetrated the lung for about two inches, when the cavity was opened. It was found to contain a large slough of pulmonary tissue as big as a fist.; this was removed and the cavity packed with iodoform gauze. Five days later another cavity was found, which communicated with the first by a narrow opening, and resembled it in also containing a large slough. This was treated in the same way. The quantity of expectoration at once diminished, and became simply purulent instead of fœtid. Six weeks later the cavity had completely closed. There was not even a sinus left, and the patient went out of hospital having gained over 30 lbs. in weight. The writer considers that such cavities should be opened freely.

The Causes of Recovery after the Accidental Division of the Thoracic Duct.—Wendel (*Deutsche Zeitschrift f. Chir.* Bd. 48. Heft. 5 u. 6, 1898) found, on looking through the material operated on by Küster, of Marburg, during the last 27 years, that the thoracic duct in the neck had been wounded accidentally no fewer than five times. This accident has lately aroused considerable attention (v. *Annals of Surgery*, June, 1898, and MEDICAL AND SURGICAL REVIEW OF REVIEWS, Vol. I., p. 61). In one of these cases chyle escaped during the operation, but never

afterwards; in the rest chylorrhœa persisted for some time. In one it lasted for five weeks, and brought the patient very near death. The chylous fistula healed in every case under careful plugging with gauze.

The writer has investigated the anatomical reasons for this frequent recovery after division of the thoracic duct. (1) Out of 17 museum specimens he found that a single duct was present in only 8; in the others there were several parallel trunks. In two of these preparations there were communicating branches with the vena asygos. (2) The writer injected the duct in 12 bodies, and found that (*a*) there were numerous lateral branches, the size of a silk thread, some of which could not be traced further than the loose tissue of the mediastinum, while others were found in close proximity to the intercostal veins and the vena azygos; (*b*) in two cases there was an obvious communication between the duct and the vena azygos; (*c*) in four cases only did the duct end singly; in the rest it had several mouths.

These anatomical facts explain why, in the majority of cases, a wound of the thoracic duct in the neck does not prevent the chyle flowing into the veins. If no collateral branches are present, a chylous fistula persists until they are formed. The best treatment is plugging the wound, taking care that the patient receives plenty of nourishment, which, if necessary, must be administered *per rectum*.

Chronic Pyæmia Caused by the Staphylococcus Albus.—Wohlgemuth (*Berliner klin Wochenschrift*, No. 36, 1898) publishes a remarkable case of chronic pyæmia. A man, aged 56 years, was operated on for hæmorrhoids, after which it was necessary to use the catheter for a few days. A very acute urethritis and cystitis followed. These were apparently cured, when an acute epididymitis appeared. The left sternoclavicular joint became red and inflamed, and a phlegmonous infiltration spreading from it over the whole of the left supraclavicular fossa required free incisions. Later, the patient suffered from a neuritis of the brachial plexus, first on the left side, then on the right, and an abscess in the gluteal muscles. The vertebral column was attacked: the fourth and fifth dorsal and the sixth cervical spinal processes became prominent, and the pains radiating down the arms unbearable. An abscess formed in the thigh and was opened. The whole course of the disease was extremely chronic, 5½ years having elapsed, up to this point, since the operation. Finally, compression-myelitis appeared, and resulted, after five days of acute symptoms, in bed sores, and in complete paralysis of both legs and of the bladder and rectum. An intradural abscess was diagnosed, depending on chronic osteo-myelitis of the vertebræ, and the spinal canal would have been trephined if the patient had not declined the operation. The acute symptoms subsided and the man was still alive seven months after the paper was written, though in the same paralysed condition. An examination of the pus from these abscesses proved that the whole disease was caused by the staphylococcus albus. Staphylococcus-osteomyelitis of the spine is a rare disease, and in the hitherto reported cases has always run an acute course, and been caused by the staphylococcus

pyogenes aureus, though in rabbits, Lexer and Colzi have each succeeded experimentally in producing spinal osteo-myelitis with the staphylococcus albus. The case is also interesting because the organisms obviously invaded the system through the urethra, while most cases of osteo-myelitis are cryptogenetic, *i.e.*, their starting point is obscure. It is noteworthy that none of the long bones, though they are the common seat of staphylococcus osteo-myelitis, were affected in this case.

Ventricular Laryngocele.—Dr. Cohen Tervaert (*Arch. Internat. de Laryngol.*, November 2, 1898) describes a curious case of ventricular laryngocele in a man 62 years old, who was troubled with difficulty in breathing, especially on going upstairs. Almost the whole of the entrance of the larynx was covered with a bulla; the left side of the larynx was motionless, the right side had its normal mobility. On a second examination the bulla was absent, but returned on making a vocal effort, and gradually reached its full size. Some smaller bullæ also made their appearance, and it looked as if the ventricle of morgagni were enlarged. It is believed that the swelling is caused by a dilated ventricle, or by an appendix distended with air in respiration, which gets into it by a tear in the mucous membrane, the walls of the ventricle having become thin and yielding to pressure. The bulla protrudes through a hole in the wall of the ventricle, and it is proposed to remove it by means of a snare.—*Bristol Med. Jour.*

Oblique Fracture of the Patella.—Kofmann (*Deutsch. Med. Woch*, No. 43, p. 685.)—Fracture of the patella is a common accident, but is almost always either horizontal or stellate. Dr. Koffman reports the case of a workman who was struck by a steam hammer near the knee, and had the patella fractured into an outer large and an inner small fragment, the line of fracture running first vertically from below upward, and then bending somewhat inwards. The knee joint was filled with blood, and there was a præpatellar hæmatoma; the anterior layer of periosteum over the patella was apparently not torn through. The patient could walk but suffered considerable pain in doing so. Rest and an ice bag with subsequent massage was the treatment adopted. Two cases of this accident are reported by Baker in his monograph on *Fracture of the Patella*; and another case, apparently similar to that of Dr. Kofmann, is recorded by Tresonet (*Gaz. des Hôpit.*, No. 12, 1881, quoted in Virchow's *Archiv.*, 188, S. 335, II.). In this last case the patient only became aware of the fracture three weeks after the accident, and did not come for treatment till ten weeks had elapsed, during which time he kept about as usual.

The Opening of Abscesses from Appendicitis into the Bladder.—D. Vladoff (*Thèse de Lyon*, 1898, *Abst. Lyon Médical*, Nov. 28, p. 351) could find only fifteen cases recorded of this rare occurrence. Excepting cases where the phlegmon is hypogastric, and involves the space of Retzius, when there are signs of pericystitis, this termination is relatively favourable. Ten cases ended in cure with spontaneous closure of the vesical communication. But whether the cure was permanent cannot be said.

The remaining five died, two from peritonitis, one from phthisis, one after operation for removal of the appendix, and one from severe hæmaturia. Cystitis never ensued, frequency of and pain in micturition when present were due to pericystitis.

The treatment depends upon the period of the disease. In the beginning the inflammatory swelling should be incised. Vesical irritation shows danger of perforation. If perforation has occured, according to M. Poncet, in the absence of complications, the natural termination in cicatrization should be awaited. The bladder should be disinfected by douching. Later, if there is a relapse of appendicitis, the appendix should be removed.

Hereditary Cerebellar Ataxy. — Classen (*Centralblatt f. innere Med.*, December 3, 1898) describes a hereditary, or rather family form of cerebellar ataxy, occurring in three male cousins, whose family history is well-known to him. The disease is popularly known in the neighbourhood as "flying gout." There is deficient muscular co-ordination, which leads to movements very like those of disseminated sclerosis, but in which the spastic element is wanting Thus the gait is that of a drunken man, and there is no dragging of the feet. The tremors of the hands and arms resemble those of disseminated sclerosis in becoming worse when these are used, but differ from them in never completely ceasing when they are resting. In the most marked case it was impossible for the man to sit still a moment, even the trunk swaying backwards and forwards. Romberg's symptom is absent, and the patellar reflexes are marked. This distinguishes cerebellar ataxy from Friedreich's disease. Nystagmus may be present, but in the most marked case it was absent. The muscles of expression are usually involved so that the patient constantly makes grimaces, or appears to be in a state of perpetual surprise. Articulation is indistinct; the speech is not deliberate and "scanning" as in disseminated sclerosis, but the words after being mouthed are, as it were, shot out.

The disease always began after middle age; in these men, who were all persons of feeble intellect, at 54, 55, and 65 respectively. It is doubtless closely releted to Huntington's chorea, which likewise is hereditary and begins late in life, but as far as is known the anatomical changes in the latter disease are to be looked for in the cortex of the cerebral hemispheres. Paul Londe, who has collected the scattered literature on the subject of cerebellar ataxy, describes a preataxic neurasthenic stage, and slight scoliosis as an almost constant symptom. Out of Classin's three cases there was kyphosis in one, scoliosis in another, and a normal spine in the third.

Anatomically the nervous symptoms appear to depend on a diffuse atrophy (not degeneration) of the cerebellum and cerebellar nerve tracts.

The writer has been able to construct a very complete genealogical tree of the family, and to trace the disease back to the grandmother of the oldest members now living, among whom are numbered the three ataxic cousins. One of her sons committed suicide, and the other

children, one son and three daughters, all suffered from "flying gout" after 50. It disappeared in the next generation, but was replaced by other anomalies, such as mental weakness, stuttering and scoliosis, the latter being usually combined with kyphosis. Further, two brothers of the originally affected grandmother gave rise to families in which idiocy and imbecility (affections of the hemispheres) predominated. One of their male grandchildren, who was otherwise healthy and intelligent, had choreic movements of the head and nystagmus. In all the families females were in the majority, though the ataxy mostly affected the males. The etiology of these nervous diseases is completely obscure.

The Nervous System in Scleroderma.—In the December number of the *Glasgow Medical Journal*, Dr. Lindsay Stevens publishes a lecture on a very important case of scleroderma, in which there was pronounced hemiatrophy of the face, body and extremities. A full clinical account of the case was published in the *International Clinics* in 1897. On re-admission to hospital in the spring of 1898 the skin on the affected side was breaking down and ulcerated, and there were symptoms of an ovarian tumour. Laparotomy was performed for the removal of this tumour, but unfortunately she succumbed on the third day after operation. There was a complete absence of pericardium, and there were cicatrices in the spleen and mixed parenchymatous and interstitial nephritis. The cortical matter of the hemisphere opposite to the atrophic side was, perhaps, a little thinner, but no microscopic examination is recorded. In the spinal cord, however, the grey matter of the right (the affected side) anterior horn was diminished, the ganglion cells were smaller and less numerous, and their nuclei and plasma granules were not so well defined as in the corresponding cells of the opposite side. The neuroglia also in the right horn seemed denser than in the left. Corresponding changes could not be made out in the medulla or pons. Throughout the cord, medulla, and pons the arteries, especially of the grey matter, were surrounded by spaces, either empty or containing a structureless homogeneous material, and most of these spaces had well-defined margins. The nerve fibres from the cervical and lumbar plexuses showed a well-marked parenchymatous degeneration. The skin showed absence of fat, thickening of the horny layer and atrophy of the papillæ. Between the papillæ and the muscles there was a thick layer of dense connective tissue. Dr. Stevens regards the atrophy of the anterior horn, the changes in the cells there, and the cavities around the vessels, as of much importance. He looks upon the condition as the result of these changes—*i.e.*, as a trophoneurosis of central origin. The neuritis he regards as secondary and recent. The case is of much interest, and its importance is enhanced by the long time —12 years—during which the patient had been under observation. We should doubt, however, whether Dr. Lindsay Steven's explanation of the relation of the changes in the skin to those in the central nervous system will be quite satisfactory to everyone, and we should have thought it would hardly be necessary to invoke some recent parenchymatous neuritis to account for changes in the peripheral nerves. The spinal lesions would account for them.—*Lancet*, January 7.

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ABSTRACT OF AN ADDRESS ON A PROPOSED SCHEME FOR A DOMINION MEDICAL COUNCIL.

BY T. G. RODDICK, M.D., LL.D., M.P.

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As you are all aware, by the British North America Act, the subject of education was placed within the exclusive jurisdiction of the Provincial Legislatures. Section 93 of that Act reads: "In and for each "Province the Legislature may exclusively make laws in relation to Edu- "cation, subject and according to the following Provisions." These provisions do not, however, interest us, as they have reference entirely to common schools. This fact would give one the impression that professional education was not meant to be included in the section, or that it was overlooked or forgotten by those who were responsible for the framing of the act.

The Confederation of the Provinces had scarcely been consummated when our profession realized that a mistake had been made and that the multiplicity of medical boards throughout the Dominion would lead to great abuses and untold complications. Therefore we find the Canadian Medical Association at one of its earliest meetings, in 1869, suggesting a Dominion Medical Bill, called "The Medical Act of the Dominion of Canada." This bill, most comprehensive, was presented before the Association at the third meeting, in the city of Ottawa; and after a long and somewhat acrimonious debate, was finally abandoned; and so far as I know, was never brought up for consideration. Doubtless the fact that the profession in Ontario had, in the meantime, put into operation their own medical act, militated against the greater scheme. I am inclined to think that other reasons for its early demise are to be found in the attempt made, practically to expunge the provincial boards, and also to give a prepondering influence to the universities.

Nothing further was done however in this direction until a very few years since, when at the meeting of the Canadian Medical Association in Kingston, a committee was formed to discuss and report upon the question of interprovincial registration or some scheme of reciprocity, all with a view to harmonizing the practice of the profession throughout the Dominion, but more especially on the frontier settlements of the various provinces.

Little of a practical character was accomplished until last year, when the committee reported very fully, making among other recommendations the following: "That so soon as the various councils of the

Dominion shall establish an examining board of the Dominion conducted by examiners appointed by the medical councils of the several provinces, their candidates passing a successful examination before said board and obtaining a certificate to that effect, shall be entitled to registration in the several provinces of the Dominion on payment of the registration fee, providing they are not guilty of infamous or disgraceful conduct in a professional respect.

"Your committee desire to recommend that further efforts be made to ascertain the practicability of federal legislation leading to the establishment of a certain qualification which will also place the profession in Canada upon an equal footing with that of Great Britain, and that Dr. Roddick be authorized to take the necessary steps in said matter."

"We further recommend that this association shall appoint a committee who shall consider and recommend the details as to the number of examiners to be appointed, the method of conducting examinations the fees to be charged, and other necessary details to bring the aforesaid scheme into active operation, which details the officers of this association shall, with the foregoing, send to each of the respective councils for approval."

The following were named a committee to strengthen Dr. Roddick's hands before the Government:—Dr. McNeil, Prince Edward Island; Dr. Muir, Nova Scotia; Dr. Walker, New Brunswick; Hon. Dr. Marcil, Quebec; Dr. Williams, Ontario; Dr. Thornton, Manitoba; Dr Bain, Northwest Territories, and Dr. McKechnie, British Columbia.

The delegates from Quebec on the committee could promise nothing with regard to a central examining board for the Province of Quebec, the universities having already positively refused to surrender their charter rights.

Feeling the responsibility of this charge, I have been engaged more or less, ever since the meeting, collecting information from various sources (among others from the law officers of the Crown) and am now in a position to place before the profession of Canada a scheme which if acceptable to the various medical boards of the Dominion, may I trust with some modifications, become law at no distant date.

At first sight it would seem as if any plan were impossible that looked to united action. The Dominion Parliament cannot, on the one hand, infringe on the Provincial jurisdiction, while, on the other hand the Provincial Legislatures cannot unite in creating a central or federal medical board, because their powers are, in each instance, confined strictly to their own territory. If this opinion be correct, any scheme looking to interprovincial registration, or in other words any bargain made between the Profession in the various Provinces, or between the Boards as representing the Profession, would be *ultra vires*.

Under Section 91 however, of the British North America Act, the Dominion Parliament has power "To make laws for the Peace, Order "and good Government of Canada, in relation to all matters not coming "within the Classes of Subjects by this Act assigned exclusively to the

Legislatures of the Provinces." Under these general terms it is believed that the Dominion Parliament may create a corporation for such objects relating to medical education and practice as are of general Dominion interest, and importance, and as are beyond the Provincial powers.

Uniformity of medical education and the promotion of interprovincial registration are just such objects. The plan by which it is now proposed (for our purpose) to effect them is as follows:—

By an Act of the Dominion Parliament, a corporation may be created called, let us say *The Dominion Medical Council* which would be composed of medical practitioners from each province and from the North-west territories. The principal function of this council would be to register all persons who have complied with certain requirements, as to education and training for the practice of medicine and surgery, and all applicants who shall have complied, would receive what might be termed Dominion registration by the council.

This registration would, however, *per se* confer no right to practise in any province of the Dominion. The Dominion Parliament has, of course, no power to make such an enactment; but it is within its power to enact that such registration shall alone confer the right to practise in any of the territories over which it has direct legislative control; and it may provide that such registration shall be a condition of employment in any medical capacity in the active service of the Dominion, as for example, the quarantine service, penitentiary surgeons, mounted police surgeons, the surgeons of the militia force generally, etc. Besides another important result of the establishment of such a system would be that Medical practitioners registered under it could claim registration under the Imperial Medical Act of 1886, without undergoing further examination. By this Act (as you are aware) where parts of a British possession are under both a central and a local legislature, the authority of the central legislature is requisite to entitle a colonial practitioner to British registry. Under the existing systems of provincial registration, Canadian practitioners are debarred from entering the extensive field of medical employment in the various departments of the Imperial service, such as for example, the army and navy, the Indian medical service, the colonial medical services, medical service under the board of trade, including ships' surgeons, etc., also from employment as sanitary officers in the United Kingdom.

At this point, however, the powers of this council would cease. *In order to bring about what we most desire,* viz. interprovincial registration, all the medical boards in the Dominion would have to be consulted, and their consent obtained to the passage of a short Act in their own Legislature, giving the right to any person registered under the Dominion Act to practise in any province, subject, of course, to the payment of any fee that the Province may impose. It will have to be shown further that the person obtaining Dominion registration has given evidence of possessing qualifications at least equal to those required for registration under the existing law of any Province. In other words, the educational

standard as to preliminary examination for study, the professional curriculum followed and the final examination must be fixed by the Dominion council at a level as high as or higher than that of any Province, with power in the council to keep it always so; and in case of failure at any time to maintain the standard, the Governor-General in Council may have power to intervene.

In the case of some of the Provinces, where the medical councils already possess the power of determining such equivalents, this matter could, perhaps, be arranged directly by these Councils. The medical councils of Ontario, Nova Scotia and the Northwest Territories have by recent enactments obtained such powers.

It will be observed that the proposed plan avoids in every possible way any encroachment upon the exclusive right of the Provinces as to maintaining their own system of medical education and registration. *I fully realize that any scheme, to have a sound constitutional basis and prove acceptable in working, must not encroach upon the provincial autonomy.* The various provincial medical boards or councils, (as they may be termed) shall continue their work of examination and registration as before, and to them shall be left all questions of taxation, discipline, etc. In a word the establishment of a Dominion Medical Council would simply provide a direct and efficient way of interprovincial registration, while promoting a high level of professional education.

One of the most difficult problems in connection with this subject is the composition of the proposed council. It is evident that it must be thoroughly representative of the Provinces; and as it will have to deal with professional questions, it should be kept above the plane of political interference. The matter, however, being one of great public importance, and the assistance of the Dominion Parliament being invoked, some provision would doubtless have to be made for the representation of that interest.

Let me suggest, then, that a Provincial Council consist of three classes of members, all of whom would be registered medical practitioners:

(a). One for each Province, including the Northwest Territories, to be appointed by the Governor-General in Council.

(b). One from each Province, including the Northwest Territories to be appointed by the Medical Council of the Province.

(c). The President of each Provincial Medical Council to be an *ex officio* member.

This would give a council of 24 members.

It is a question whether all the Provinces should have an equal number of members, in the council as permanently constituted, or whether the representation should be in some measure graded according to the relative number of practitioners in each province. In any case it would be desirable to keep the council of moderate number, for ease and efficiency of working, and to secure a representative majority at all times.

Now, so far, the outline of the proposed scheme deals only with students of medicine wishing to qualify themselves for practice in all or any of the provinces which accept Dominion registration as sufficient evidence of professional capacity.

With regard, however, to medical practitioners actually practising at the time of the passing of such an act, should the right be given them to avail themselves of the privileges under the act admitting them to practise in other provinces than that in which they had originally qualified? Should it be retroactive?

Many objections would doubtless be raised to such a clause, especially by the profession in the younger provinces who might dread a stampede in their direction. This could readily be overcome, however, by making some time limit, say five or seven years of actual practice, coupled with evidence of good professional standing. Medical men in practice for that length of time would not be so likely to migrate as the more recent graduates.

There are many matters of detail that might be introduced, but my chief purpose to-night is to excite a discussion on the general practicability of such a scheme as that which I have endeavored to outline.

The present state of affairs in connection with the practice of our profession in this country is anomalous, and exists perhaps, nowhere else. Where we have, simply imaginery lines or narrow rivers separating our provinces the present arrangements must continue to lead to hardships, both to the public and the medical men themselves, and sometimes to grave abuse. Besides, the provinces are all congested, the number of medical men being far too numerous in proportion to the population. This scheme would not only lead to a more equable distribution, but it would throw open the entire British Empire to our Canadian youth who have adopted medicine as a profession.

FEVERS IN CHILDREN; THEIR SIGNIFICANCE, GENERAL DIAGNOSTIC VALUE, AND ANTIPYRETIC TREATMENT.

A LECTURE BY SAMUEL S. ADAMS, M. D.

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GENTLEMEN: Fever is a group of symptoms the most prominent of which is elevation of temperature.

In the healthy child, variations in the productions of heat are compensated for by variations in its discharge, while in fevers the production and loss may both be increased but seem no longer to be interdependent. There may be no increase in heat production but a decrease of heat dissipation which will cause a rise of temperature or the converse.

Among the principal causes of fever may be mentioned, first, physiological ferments acting independently of bacteria. A familiar example of fever rising from this cause is afforded by the aseptic fever observed to follow injuries in spite of the strictest antiseptic precautions. A second cause of fever is to be found in the presence in the system of substances which are the product of micro-organisms not in themselves pathologic. They are frequently met with in the infant and young child as a result of fermentative and putrefactive changes. We know that, under certain conditions, certain mico-organisms are present, and although in themselves harmless, they become virulent in their nature as a result putrefaction or fermentation. In consequence of this, there is set up a septic condition, the principal symptom of which is elevation of temperature, in the third place, we have, as causes of fever, poisons which are the result of specific infections. Principal among these are the infections of the acute infectious or contagious diseases. These poisons, as you know, possess certain qualifications, *viz*: (1) The power of life; (2) the ability to multiply to an unlimited extent; (3) the power of affecting the organism as a whole; and (4) the power of conferring upon the individual that condition usually known as immunity—*i. e.*, a certain protective element enters into their life history, which prevents the individual from having a second attack of these acute infectious poisons. There are, of course, others which give rise to temporary fevers in the child, such as crying or fits of temper, but they are of minor importance.

From these causes of fever we are led to conclude that an elevation of temperature in the child indicates, as a rule, some pathologic condition. Now, in the indication of a pathologic condition we do not necessarily understand that it can be detected even by the most expert upon first sight and without careful observation, but we do mean that by careful observation and training we can determine, in the vast majority of cases, the pathologic condition which produces the elevation of temperature in the child. Accordingly you should not be satisfied simply with an elevation of temperature, but should reserve the right to formulate your opinion as to its cause carefully and slowly, if necessary, in order that you may intelligently apply the means for its amelioration.

From our knowledge of children we understand that the slightest disturbance may produce a very marked rise of temperature, and this leads us to conclude that a great deal depends upon the individual susceptibility of the child to one of the few causes which are responsible for this. To illustrate: A child, from indiscretion in diet, may develop a temperature of 105° or 106° F. Now, we know from experience that a temperature of this kind cannot be maintained with safety for any length of time, but, fortunately for the child, nature is of that generous disposition that usually by a diarrhœal process or by the rejection of food or of offending material, the temperature soon subsides. Sometimes the most violent and fatal disorders of childhood are accompanied by a low range of temperature. This is the case, for example, in the first stage of tubercular meningitis. If, therefor, we depend upon the temperature alone, we shall go astray, since it is not an index of the severity of disease. Thus, the pendulum swings both ways. In some cases we may have it swinging so that the temperature is a direct indication of the severity of the disease, while in other instances, it may swing in the opposite direction, and may give no idea of the gravity of the disorder.

In children the temperature is subject to sudden and violent rises, more frequently than in the adult. In the latter there is some part of the mechanism which prevents these sudden fluctuations. In the child, we have not only the primary rise in the afternoon, but not infrequently several maxima and several minima in the twenty-four hours. This, of course, in very many of the acute infectious diseases is of the most confusing character, and should always be borne in mind in estimating the value of this one symptom in connection with any pathologic condition.

Again, we may have not only irregularity, but also remissions to a certain extent—a periodicity. We know there is some regulating influence which will control the periodicity, and we must, if possible, search, and be diligent in this search, for any condition which might produce in the child a remission of the fever. An illustration is to be found in mixed infections. Not long since we were taught that no two infectious diseases could exist in an individual at the same time, and particularly in the case of the acute eruptive diseases of childhood. I was taught this, and believed it, But what has been the result? That teaching has been most emphatically contradicted since then by practical experience; I have not only met with double infections but, during the course of the disease, treble infections. That is to say, during the course of a scarlet fever I have observed a croupous pneumonia, and following this, diphtheria which was clearly demonstrated to be such, both pathologically and clinically. We can, therefore, have during the course of an acute infectious disease, other diseases, and an unusual and sudden elevation of temperature is many times accounted for by such a mixed infection.

In most of the diseases there are stages, with which I presume you are perfectly familiar. There is the initial stage, the fastigium and the stage of defervescence, But here let me caution you against depending too much upon what you see in books, lest you be sadly mistaken, since in different diseases, and particularly in the exanthemata, these stages

are often anything but well-defined. Measles is, perhaps, an exception to this; but in the other diseases of this class you will be very much surprised not to find the gradual rise of temperature, a marked fastigium and the slow decline in temperature which is therein depicted. In children these are irregular, and sometimes most confusing, He who depends upon the temperature chart for his diagnosis will be sadly led astray. This is exemplified very frequently in hospital work, where the internes will bring a temperature chart, and show you, on the strength of its supposed indications, what a nice example of a certain disease is in the wards, when more careful observation will probably show that it is a case of an entirely different kind. For instance, we are taught that in scarlet fever a sudden rise of temperature takes place, and that after this the temperature keeps up for four or five days, with a daily remission, and that the maximum and minimum are about on the same line. We are also taught that with the decline of the eruption defervescence takes place. This is all very nice as a type, but in scarlet fever, taking a large number of cases, we find that the typical chart drawn in the books is not evident. So it is with tyhoid fever in children, and this fact probably explains why typhoid fever has not been properly diagnosticated in infancy. It is not rational, and it certainly is not safe for the physician to lose sight of the general symptoms and pin his faith entirely upon the one symptom of fever. In measles, we have one of the most typical charts that can possibly be made. There is a premonitory catarrh, and with this there is an elevation of temperature. It then recedes almost to the normal, but on the fourth day it suddenly rises again, and with this elevation there is an exacerbation of almost all of the symptoms, and the eruption comes out. When the disease is at its height, the temperature may reach 106° F., but the charactistic of this temperature is that it very soon falls. If this high temperature were maintained for any length of time, it would be a very serious matter; but fortunately it usually subsides in a few hours to 100° or less. What does this teach us? You may suspect from the temperature chart alone the presence of measles, but when you consider that there are other diseases, which are specific infections, and which will give a similar temperature curve, you lose faith in that one symptom as being pathognomonic of the disease.

In certain diseases we have the termination of the fever by crisis. Where the fever terminates in this way, it is sometimes very confusing. Thus, it is not uncommon for the physician after a study of the temperature chart in a given case to conclude that he has to deal with typhoid fever, even though there are no rose spots visible; but after several days of fever the temperature suddenly falls to the normal, or below that point, and he then feels that he must abandon his first diagnosis. At such a time it is likely that the physician will awaken to a realization of the full significance of the ratio between the respirations and the temperature. In a case of typhoid fever the respirations may be out of proportion to the temperature and pulse, and yet the presence of a deep-seated pneumonia may not be suspected because of obscure physical signs, until the occurrence of the crisis.

We use the terms intermittent, remittent and continued fevers in a different sense from that which formerly attached to them; they now mean different types of disease rather than different pathologic conditions; and when I use them I wish you to understand that this is the meaning intended to be conveyed.

What is the significance of the daily excursion of temperature? By daily excursion of temperature we mean the temperature taken in the twenty-four hours. It may be taken five or six times, or three times, it matters not; the daily excursion is the difference between the maximum and minimum temperature for the twenty-four hours. The significance of the daily excursion of temperature is great; it is a very important guide to prognosis as well as diagnosis. The daily range of temperature will vary in different individuals. If there is a daily range of 103° to 105°, that means that the excursion is 2° for the twenty-four hours. It does not make any difference, so long as we have a safe guide, how high the temperature is in any fever of childhood. By safe guide, I refer to the *manifestations* of high temperature. The mistake is constantly being made by general practitioners of placing too much dependence upon high temperature *per se*. An elevation of temperature without corresponding evidence of cerebral disturbance is of no significance. For example, a child has croupous pneumonia. The temperature range is from 103° to 104°, or 105°. The individual is getting sufficient air; the pulse is good; there are no mental disturbances and the physical signs are well-marked. Under such circumstances, it is bad practice to attempt, by any active measures to reduce the temperature, simply because it reaches the degree of 105. The reason for this statement is, that we know croupous pneumonia to be a self-limited disease, and that it ordinarily runs a definite course, which terminates by crisis. Reasoning from this, the temperature should be let alone. On the contrary, suppose that the temperature is 105°, with manifestations of the injurious effects on the nervous centres. Here, it would be bad practice not to interfere and relieve, for a few hours at least, the brain from the deleterious influence of the high temperature.

In the treatment of all acute infectious diseases, this principle should be your guide: Rather use intelligence in interpreting the injurious effects of high temperature than plunge the patient into a bath, or resort to internal means of reducing temperature because the thermometer registers a high degree. Some children will bear a temperature of 103° or 104° without any cerebral manifestations, yet in the same family there may be other children who are thrown into a state of high nervous excitability, or even into convulsions, by a temperature of 101° or 102°. You must, therefore, determine the effect of the high temperature upon the *individual* child rather than base your treatment on the height of the temperature alone.

Parents are terribly frightened by high temperature, and insist upon the physician doing something to relieve it. They frequently say to me: "The temperature is 103° F. or over, why don't you reduce the fever?" My invariable answer is: "As long as with this temperature there are no evidences of injury, nothing should be done."

Upon the methods of taking temperature will depend, in great part, your success. You are taught aseptic surgery and aseptic midwifery, and you are also, I know, taught aseptic thermometry. Nothing shows the care of the physician, and nothing will so impress the family as the care which he bestows in the use of the thermometer. You may think that having washed it and packed it in your pocket, you have done all that is necessary. When you go to a child, however, the mother does not know but that the thermometer has just been in the rectum of another child. You should therefore make it a practice to cleanse the thermometer in the presence of the parents or the nurse, both before and after using it.

You can get the best results by taking the temperature of an infant in the rectum. Only recently I was called in consultation by a physician who was old enough to be my father. He stated that the infant had no fever, and he could not understand why the child seemed to be sick. On inquiry, I learned that he had taken the temperature of the child—an infant of nine months—in the mouth! I then insisted upon having the temperature taken again, both in the mouth and in the rectum. It registered normal in the mouth, but 105.5° in the rectum. Not only this but the baby was suffering from a croupous pneumonia presenting the clearest physical signs. I stated to the family that the crisis would occur in twenty-four hours, and this perdiction was fortunately confirmed. But you say: "The child is fractious and some mothers do not wish to have the child disturbed by having the temperature taken in the rectum." If you wish to be successful in practice, you must be an autocrat, and you must teach people that you will, under all circumstances, have your way. Make them understand that you are going to take the temperature in your way, and if the parents will not consent to this, withdraw from the case. You will give some offense, and occasionally lose a patient, but in the long run it will be to your advantage as well as to theirs.

The way to make a diagnosis is not on any one symptom, but on the group of symptoms which the pathologic condition presents. Usually the first thing the family wishes you to do is to reduce the temperature. Bear in mind what I have said, that if there is no sign of cerebral disturbance, though the temperature is high, there is no necessity for its reduction. I venture to say that if you simply attempt to reduce the temperature, losing sight of everything else, in the vast majority of cases the diagnosis will be obscure. We often lose sight, in this way, of the most valuable symptoms; hence, my advice to you is, if on approaching a case for the first time you find an up-and-down temperature without evidence of cerebral mischief, to remember that the reduction of the temperature may please the family, but it will only add to your confusion. If the temperature is not doing harm, therefore, reserve the right of allowing it to go on until you have determined the true nature of the disease. Meanwhile it may be necessary to give a placebo. After you have made your diagnosis, if reduction of the temperature is demanded, you can do it intelligently and safely. The successful issue of a case conducted on this plan will more than please both the physician and the patient's family.

This brings me to the question of the treatment of fevers.

The first is the administration of internal antipyretics, in the use of which great harm is very frequently done. It is true that by a good dose of antipyrine, acetanilide or phenacetin we can reduce the temperature and make the child apparently better. The parents are satisfied, and you may think that you have accomplished something; but what is the result? The effect of internal antipyretics is transitory, and consequently you must resort to one of two things—either allow the temperature to return to its former height, or reduce it by the further adminis ration of powerful antipyretics. In this way you not only confuse the diagnosis, but do much more, for, such drugs exert a violent and paralyzing effect on the heart.

I do not mean to decry the judicious administration of them, but I do believe that antipyrine, in the hands of even the most skilful is a dangerous drug. I have seen the ill effects of it, and the apparent good effects. I have seen a child wildly delirious from croupous pneumonia made rational by a dose of antipyrine, so that it could sit up in bed and chat with its parents, but I have seen the same child relapse into a condition of high temperature within twenty-four hours because the heart had never regained the tonicity which it had had prior to the violent reduction of the temperature by antipyrine. My experience with antifebrin is similar. With phenacetin I have had a little more favorable results. Of the internal antipyretics it is one of the safest, but it should be given judiciously, and only in those cases in which we require a rapid reduction of the temperature. Its administration should usually be accompanied by free stimulation. These antipyretics act in two ways, *i.e.*, they lessen heat production and increase heat dissipation, and we must take this into consideration in determining the nature of the antipyretic to be given.

The second method of reducing temperature is by the external application of cold. This method is not only the most beneficial, but it is the most stimulating to the various systems. It may be done be means of the cold pack, by the application of the ice-cap to the head, or of the ice-coil to the abdomen; but far beyond the beneficial effects of the wet-pack and these other methods, the application of the Brand method, pure and simple, is unquestionably the best means of reducting fever, no matter what pathologic exists. I say this without any hesitancy. I have no compunction whatever in taking from its bed a child having one of the infectious diseases with a high temperature and accompanying nervous excitement, and placing it in a bath under proper conditions, for, I believe that I am not only reducing the temperature but am placing the system in far better condition than prior to the administration of the bath. You have probably been taught the Brand method, but remember it must be carried out in every detail. It is not sufficient to take the little one out of bed and place it in a bath-tub. The bath-tub should be brought to the patient, and the latter should be gently lifted out of bed and placed in the tub, and then the manipulations should be conducted during the bath, and the necessary stimulation given. The result is that the reduction of the temperature is affected with perfect safety.

I have demonstrated to my class in the Georgetown University a case like the following: A child of eight years who was wildly delirious with typhoid fever was placed in a tub containing water at a temperature of 90° F., and kept in this bath for fifteen minutes. Enough heat was dissipated from the child to raise thirty gallons of water 4° F. This shows the immense amounted of heat abstracted. And the child, who was wildly delirious at the time the bath was begun, became conscious and rational; the pulse increased in force. Quite commonly the temperature rises after three or four hours to its former height, when the bath can be repeated.

In connection with the treatment of acute infectious diseases, I am frequently asked why we do not see so frequently the complications and sequelæ commonly observed in former years. When I began to practice medicine, as soon as a child was attacked by one of the eruptive diseases, he was isolated, and every crack in the windows of the sick-room was sealed A blanket was placed over every door but one. The child remained in that vitiated atmosphere from the beginning to the end of the disease, with the result that there was a continual inhalation of a vitiated and germ-laden air. Twenty years ago to give a drink in such a case was equivalent to the physician receiving his passport, so far as that household was concerned. In private practice the complications of scarlet fever, and the post-scarlatinal conditions are now much less frequently seen than they were ten or fifteen years ago. It can be attributed not only to the freer use of water and better ventilation of the sick-room, but also to the practice of placing such fever patients in baths when the temperature requires reduction. Such treatment favors the elimination of the toxic material, and, as a result, convalescence is more rapid and smooth, and the complications and sequelæ are avoided.

The temperature of the bath varies considerably in different cases. With a temperature of 105° be very careful how you reduce the temperature of the bath below 95°, the books to the contrary notwithstanding. If you can accomplish what you desire by a warmer bath, and with less inconvenience and discomfort, why should you use a colder one? Some advise a bath at 60° or 55° F., and some even a bath at 50° F. I claim that just as good results follow the use of a bath having a temperature of 95° to 100°, provided a cold cloth is applied meanwhile to the head. The ordinary duration of the bath is ten minutes, and during this time the patient should be subjected to continuous friction. I should hesitate a long time before giving my consent to a fever patient receiving a bath at 55°. Your city water probably has a temperature of about 50°, so you can readily test the effect of such a bath on a normal temperature by jumping out of bed into water just drawn from the faucet. I am confident that if you try this, you will render a verdict in accordance with what I have said.

I hope that you will carry away with you these few thoughts about the fevers of childhood. I am sure with the systematic teaching which you receive from the professor in charge of pediatrics, whom I have known for many years, you will be amply qualified to carry out the few principles which I have laid down in this lecture.—*Archives of Pedriatics.*

JOHNS HOPKINS HOSPITAL NOTES.

Clinic by Dr. Kelly.—Reported by E. Hall, Victoria, B.C. CASE 1.—Parasitic dermoid of left ovary. Removal by abdominal section. Dr. Kelly called attention to the dense bladder adhesions as indicating the facility with which such cysts discharged through suppuration of their walls into the bladder. The other ovary was cystic and the uterus presented well marked chronic inflammatory disease. As the patient was dependent upon herself for maintenance it was considered better to remove the uterus with the appendages. This was done by the Kelly method which briefly described is—a ligature, silk preferably, is placed upon the left broad ligament external to the appendage, encircling the ovarian artery, the distal part is clamped and the ligament severed with scissors, an additional gut ligature is placed further down upon the ligament. The round legaments are ligated and severed the uterovesical fold of peritoneum is then severed and the bladder freed by pressure with a sponge. The uterine artery is next found and a silk ligature applied. The uterus is then drawn upwards and towards the right, the cervix freed and cut directly across, the uterus drawn further up and the uterine artery ligated upon the right side. The broad ligament is then ligated as upon the opposite side. The cervical canal is not disinfected, as bacteriological experiment has shown this to be unnecessary, as it contains no pathogenic germs. The anterior and posterior surfaces of the stump are approximated with gut, the ends of the broad ligaments are brought inwards and stitched to the cervix and all raw surfaces covered with peritoneum. The appendix was also found elongated doubled upon itself behind the caecum, it was removed.

CASE 2.—Cervical fibroid filling the pelvis. In discussing the various methods of dealing with these cases Dr. Kelly said he preferred to first remove the entire uterus, similar to the operation previously described with the exception that the cervix is completely removed. The tumor was then carefully peeled out of its bed. The hemorrhage which was profuse was temporarily relieved by digital pressure upon the iliac artery, and hot sponges. The anterior branch of the internal iliac was ligated with many other bleeding points. The ureter was isolated and examined in order to insure its patency. The peritoneum was approximated as in the previous case. In all cases of abdominal section Dr. Kelly examines all the abdominal organs by direct nutea abdominal palpation, and as an example of the usefulness of such examination an enlarged gall bladder containing a large stone was found in this case. Upon compression the bile was forced into the intestine showing absence of obstruction. Now followed one of those exhibitions for which this clinic is noted. With the right hand and forearm inserted into the abdomen through the central abdominal incision, Dr. Kelly pressed the gall bladder containing the stone against the anterior abdominal wall while with his left hand he cut through the abdominal wall directly upon the stone which shot out of

the abdomen like a pea out of a pop-gun. The gall bladder was then closed and replaced free within the abdomen and the paietal incision closed.

CASE 3.—Lady with movable mass in right abdominal region. Diagnoses either malignant disease of the intestine or enlarged gall bladder, probably the latter. Incision directly over the tumor revealed an inflamed enlarged and odematous gall bladder adherent to the intestines. The pus was asperated, bladder withdrawn attached to the wall and drained in the usual way, several hundred stones were removed, and a piece of the bladder removed for bacteriological examination.

CASE 4.—Perineal tear including both sphincters. Case had been operated elsewhere, old ligatures still in place. As there was a small amount of mucus membrane towards the anterior part of the rectum this was carefully dissected backwards and preserved. The lateral walls were then cleared of their muscus membrane as far as the tear extended, the incision was extended in a crescentic manner backwards at each side of the anus and a careful dissection made until the ends of the splinclur muscles were isolated, a part of the fibrous ends were removed and the ends united with catgut. The raw surfaces were approximated in the usual manner.

The unexperienced operator should note that the ends of the splinclur muscles are distinctly fibrous, not muscular as is so frequently expected. The fleshy part of the muscle lies deeper, or more posteriarly and is not necessarily exposed. This operation above all others restores the natural action of the rectum. After two days oil is injected through a soft catheter and the bowels encouraged to move.

CASE 5.—Ruptured extrauterine pregnancy. Posterior vaginal section removal of foetus placenta and clots, irrigation and packing with iodoform gauze. In twenty-two cases treated in this manner only one required abdominal section on account of hemorrhage, yet the operator must always be ready for such emergency. The vaginal route is selected on account of producing less shock and more easy of performance. While Dr. Stokes, Dr. Kelly's first assistant, was performing Dudley's operation on the cervix, Dr. Kelly showed a case from whom he had removed a tuberculous kidney and ureter one year ago. For some weeks she had complained of pain and irritability and returned for treatment. The question was is there tubercular disease of the bladder originating from the left orifice, if so a vesical resection would be indicated. The patient was placed in the knee chest position, the urethera cocainized and air allowed to enter and balloon the vagina. The uretheral speculum was inserted revealing limited ulceration at upper and posterior parts; a ten per cent. solution of nitrate of silver was applied. The facility with which the interior of the bladder can be examined by Dr. Kelly's method was not a little surprising to those who had considered the interior of that organ as beyond the limits of definition. Dr. Kelly says he has yet to see a case of "neuralgia of the bladder" unaccompanied by local lesion. Tuberculous disease of the kidney may be

differentiated from pyelitis by the presence in the former of a peculiar ring of granulations around the uretral orifice while in the latter there is mere hyperæmia. In a case of obscure pain in the right loin in which a diagnosis between renal and other forms of colic, especially hepatic is desired Dr. Kelly injects sterilized water through his uretral catheter into the kidney producing renal colic. If the pain is similar to that previously experienced the diagnosis of renal trouble is given.

Epidemic Cerebro-Spinal Fever.—After referring to various epidemics in different parts of the continent, Dr. Osler stated that they had sixteen cases under treatment in the Johns Hopkins' Hospital. The invasion is generally very abrupt, chill, vomiting, pain in the head, some were seized while at work, one seized while walking down the street after dinner. Compared to other forms of meningitis there is greater cutaneous hyperesthesia also greater rigidity of the neck muscles, sometimes complete opisthotones. Arthritis symptoms also more prominent, one case very closely simulated rheumatism. Consciousness is much better retained than in the other forms. Out of the sixteen the mortality was very low, only six, whereas in the other forms, that caused by the pneumococcus, by the streptococcus, and the tubercle bacillus all are expected to die. Regarding treatment, little can be done with drugs. Great importance is placed upon lumbar puncture which is a simple procedure, harmless and easily carried out. General anesthesia is not necessary. The needle of the operator was inserted between the second and third or the third and fourth lumbar vertebrae about an inch to the side of the dorsal spine. Arching of the body forward separates the parts and facilitates the operation. From ten to one hundred and twenty-five cub. cent. of fluid are withdrawn. As this fluid is very limpid and clear, any turbidity whatsoever indicated meningitis. The fluid is examined by cover slip preparations and culture tests. The cause of this epidemic form of cerebro-spinal fever is the deplococcus ultracellularis which has been found in all fluid withdrawn. One case that recovered was asperated four times. The first gave 125 c.c., the second 45 c.c., the third 85 c.c., and the fourth 100 c.c. of turbid fluid.

Of this organism Mallary and Wright say, " In cover-glass preparations from the meningeal exudate the deplococcus frequently is situated inside the aucocytes, and sometimes within the nucleus. The appearances are very much like those of gonorrheal pus." It is discolorized by Grain's method. On blood serum the colonies appear active about twenty-four hours, after forty-eight hours they may attain a diameter of two or three m. m. They are round, colorless, shining, slightly convex or flat, moist and viscid looking. They may become confluent. They are found in the meniugeal exudate of certain cases of epidemic cerebro-spinal meningitis and mainly situated inside the puscells, some of which may contain many deplococci. In some cases the presence of the organism in the exudate may be difficult or impossible to demonstrate, and it is probable that it rapidly dies out. It has been observed in the bronchopneumonia of one case and in the nasal secretions of a number of cases.

CANCER.

IS CANCER A PARASITIC DISEASE?—This question is answered decidedly in the affirmative by Mr. Plimmer in the very important article on the Ætiology and Histology of Cancer, published at p. 430. This is not the place to express an opinion as to the validity of his conclusions; he must be judged by his peers. But his work and his beautiful plates speak for themselves. During the past six years he has examined microscopically 1,278 cancers, taken as they came from various parts of the body. In 1,130 out of the total number of cases he has found parasitic protozoa which he looks upon as the cause of the disease. But he has carried his research much farther than this. From a rapidly growing cancer of the breast in which the parasites were present in exceptional abundance, he succeeded in isolating an organism which he was able to cultivate outside the body. By inoculating these cultures in certain animals, tumours—mostly of endothelial origin—were produced, and death ensued. The next step in the experiment is to get pure cultures from these tumours which, when inoculated in other animals, will produce similar growths. Mr. Plimmer has obtained the cultures, and has inoculated animals with them. Sufficient time has not yet elapsed to enable him to make a positive statement as to the results, but one gathers that he is hopeful that the experiment will be successful. We cannot as yet be sure that Mr. Plimmer has settled the question of the ætiology of cancer; he himself does not claim to have done so, and he admits that there may be more than one cause, and that different causes may be operative in different cases. But he is unquestionably to be congratulated on having made a most valuable contribution to the literature of one of the most important questions in pathology.

IS CANCER AN INFECTIOUS DISEASE?—If cancer is caused by a parasite it must be regarded as communicable by inoculation. At present the parasitic theory must be looked upon as not proven, and, for the moment at least, the weight of scientific opinion is rather against it. Whether Mr. Plimmer's results will turn the scale remains to be seen. Not that the fact of their not gaining immediate acceptance will be any proof of their unsoundness. In the sphere of science, as in others, wisdom often calls out in the streets and no man regards it. It is interesting, however, to note that, apart from what may be called laboratory evidence, there is already a certain accumulation of facts of observation which suggests that cancer is, sometimes at least, transmitted in much the same way as tuberculosis. The infectiousness of cancer is not a new idea. Mr. Plimmer refers to a discussion on the subject by members of the Academy of Medicine of Lyons in 1773. But more than a century before that date Zacutus Lusitanus expressed the opinion that cancer was communicable by direct contagion, and he cited in proof of this view the case of a poor women with an ulceration of the breast who slept with her three sons. Two of these died of cancer within a few years; the third also suffered from the disease, but was cured by a surgical operation. The curious may find the

record of the cases in *Zacuti Lusitani Opera Omnia* Lugduni, 1649, t. i, p. 232, and in the same author's *De Praxi Admirandâ* at the end of the second volume of the *Opera*, Lib. I., Obs. cxxiv., p. 31. Nicolaus Tulpius (who is represented demonstrating a dissected arm in Rembrandt's well-known picture), in his *Observationes Medicæ* (Ed. Nova, Amstelodami, 1672, p. 292), relates the case of an elderly lady, the subject of an ulcerating cancer of the breast with an ill-smelling discharge, who was nursed with great devotion by a servant who was herself later attacked with the disease. Tulpius was so uncompromising in his belief that cancer is contagious that he embodied it in the following proposition: *Cancer ulceratus juxta ac oculorum inflammatio contagiosus est* (An ulcerated cancer is just as contagious as inflammation of the eyes.) At a later period, but still considerably before the date of the Lyons meeting referred to by Mr. Plimmer, we find J. Juncker, a pupil of the famous Stahl, maintaining that cancer is contagious. Juncker (*Conspectus Chirurgiæ*, Halle, 1731, p. 308) admitted indeed that this quality is not very marked, and that for a successful engrafting of the disease it is necessary that the infective material should fall on a suitable spot where there is already a breach of surface. This statement probably represents all that the most convinced "contagionists" would affirm at the present day.

It may be added that in some parts of France, cancer was looked upon with special dread on account of its supposed infectious character. For instance, in the middle of the last century, cancerous patients were refused admission to the Hotel-Dieu of Rheims. Wherefore a charitable canon of the cathedral of that city, Jean Godinot by name, was moved to give a sum of 25,000 livres for the building of a hospital for sufferers from cancer, who were wont to gather about church doors and display their sores. With the money a house was bought in the city, and was turned into a hospital for cancerous patients. But an outcry was made by the citizens dwelling in the neighborhood, who were alarmed at having such a pest-house in their midst. The authorities of the hospital held their ground for a time, but public opinion, which was strongly imbued with the notion that cancer was infectious, was too strong for them, and in 1778 the patients were removed to a place outside the city, formerly used as an isolation asylum for the plague-stricken. It was not till 1841 that cases of cancer were received into a general hospital, and then they were placed in a separate block.

As in the case of tuberculosis, the popular belief was ultimately crushed out by the force of medical teaching. But even in the middle of the present century Velpeau said, "For my part, I have long looked upon the contagiousness of cancer not indeed as demonstrated, but as possible" (*Traitè des Maladies du Sein*, 2nd Ed., 1858, p. 510). Since then cases in which there was at least some *primâ facie* evidence of the transmission of cancer have been published by John Hall (*Annals of Surgery*, December, 1885), H. May, (*Lancet*, 1887) A. L. Eade (*ibid.*, November 12th, 1887), R. Budd (*ibid.*, December 31st, 1887), Duplouy (Congrès pour l'Avancement des Sciences, Toulouse, 1887), Blyth (*Lancet*, 1888), and especially by Arnaudet, of Cormeilles in Normandy, who, in a series of

papers published in *La Normandie Médicale* (February 1st, 1889; February 15th and March 1st, 1899), gave the results of an investigation of cases of cancer in his own village and of thirty unpublished cases (reports of which were obtained in response to a circular) in a series of papers which appeared in the *Union Médicale du Nord-Est* (February, April, May, July, October, 1891, and August, 1892). A solid mass of literature on the subject has now been accumulated, and the question of the infectivity of cancer has come out of the limbo of creeds outworn into the light of scientific day.

CANCER HAUNTED HOUSES. A circumstance which strongly suggests the existence of an infective quality in cancer is the way in which it appears to haunt particular houses. As already said, this fact was noted in a rural district of France by Arnaudet some years ago. Similar observations were made in Germany, especially by Behla, who speaks of the disease as being endemic in a certain place. In this country some striking facts of the same kind have been published by Law Webb, of Ironbridge, and Lloyd Jones, of Cambridge. In Mr. D'Arcy Power's paper on "The Local Distribution of Cancer and Cancer Houses," published at p. 418, will be found the results of a personal inquiry, which certainly raise a strong presumption in favor of cancer being an infective disease, in the transmission of which locality plays a prominent part. Mr. Power, it should be noted, does not believe that cancer haunts houses, nor does he think the disease is water-borne. But he does believe that it haunts places, and he expresses with no uncertain sound the opinion that the germ of the disease is a *contagium vivum*, which lives in some intermediate host belonging to the vegetable or animal kingdom, from which or in which it somehow finds its way to a suitable place in the body of the human victim. According to this view, cancer is propagated in a manner analogous to that in which malaria, as Manson and Ross have shown, is transmitted.

THE GEOGRAPHICAL DISTRIBUTION OF CANCER. The analogy between cancer and malaria is made closer by the fact that both have a definite relation to a marshy soil. Many years ago, Mr. Alfred Haviland showed by an elaborate series of investigations that districts having the highest death-rates from cancer were traversed by, or in close propinquity to, fully formed rivers which seasonally overflowed their banks and flooded considerable areas; and that, geologically, these districts were characterized by alluvium and subsoils of clays of every variety of age and formation. . On the other hand, districts in which the cancer mortality was low were characterised by the oldest palæozoic rocks, especially those of the Carboniferous Limestone period. In his paper on "The Medical Geography of Cancer," published at page 400, his researches regarding certain areas selected as representative of the whole country are brought up to date, and it will be seen that the conclusions at which he arrived thirty years ago are confirmed by his later investigations. His "cancer fields" are still found along the course of rivers that seasonally flood their riparian districts.

CANCER IN ANIMALS. It used to be believed that animals are not liable to cancer, and Dr. McFadyean, in his paper on "The Occurrence of Cancer in the Lower Animals" (p. 456), says that not long ago a distinguished pathologist asserted that the disease is peculiar to the human species. How erroneous this belief is may be gathered from Dr. McFadyean's paper, in which particulars are given respecting sixty-three cases of cancer in domesticated animals which he said had an opportunity of examining. It is somewhat curious that the only one of the domesticated species not represented in his table is the pig, which used to be considered by the ancients as approaching most nearly to man in its anatomical structure. Galen's anatomy is almost entirely founded on the examination of pigs, and in the Middle Ages almost to the time of Vesalius, lectures on the anatomy of the human body were illustrated by

> "Dissections made on the bodies of swine
> As likest the human form divine."

Dr. McFadyean's investigations suggest some interesting points of contrast between animal and human cancer. The rarity of cancer of the uterus and the mammary gland in animals is particularly remarkable. He has never seen a case of cancer of the uterus or of the udder in a cow, and, as he says, the immunity of the latter organ is difficult to reconcile with the theory that carcinoma of the human breast is ætiologically connected with the irritation incident to lactation. Another circumstance that seems to negative the influence of irritation, which is supposed to be so potent a factor in the production of human cancer, is the fact that, while carcinoma is by no means rare in the horse, is not one of the cases in Dr. McFadyean's table was the starting-point of the disease in any of the parts of the body most subject to friction. Thoroughgoing partisans of the irritation theory may indeed explain the rarity of cancer of the tongue in animals, by the fact that our "poor relations" do not smoke! "Irritation" is such a convenient hypothesis, and your destitute theorist will find a "fact" to support him in anything.

IS CANCER INCREASING? Alarming statistics have been published from time to time in recent years apparently showing a rapidly increasing prevalence of cancer, not only in this country but everywhere. In his paper entitled "A Further Inquiry into the Frequency and Nature of Cancer," published at p. 385, Professor Roswell Park, of New York, states that the death rate from cancer is still increasing, not alone in New York, but apparently in all parts of the world. He adds that it is the only disease tabulated which shows a steadily progressive increment by years, and even month by month. It would appear that we are doomed before long to live under the Sign of Cancer. He makes the startling prophecy that if for the next ten years the present relative death-rates are maintained, in 1909 there will be more deaths in the State of New York from cancer than from consumption, small-pox, and typhoid fever combined.

Verneuil some years ago said that he and other hospital surgeons in in Paris had been struck by the much greater number of cases of cancer ofth e tongue and other visible parts that came before them than had

been the case thirty or forty years before He attributed the fact to the increasingly carnivorous habits of the population. The vegetarians naturally hailed this suggestion with enthusiasm, till it was pointed out that cancer is just as prevalent among the mild Hindus, to whom the fleshpot is an abomination, as among the "cow-eaters" whom they despise. Among ourselves there seems to be a widespread and popular belief that the pleasant and harmless, if not exactly necessary, tomato has something to do with the production of cancer. Whenever the question of cancer is touched upon in the lay press, this tomato theory is sure to be brought forward with a gravity worthy of a better cause.

A more rational explanation of the increase of cancer is that it is the necessary penalty of sanitary progress. More people now live to an age at which they are liable to become the prey of cancer than in the brave old days when there were no drains and the fear of the microbe unknown. Dr. Newsholme, however, who has given special attention to the question, rejects this plausible explanation. In his paper on "The Statistics of Cancer," which will be found at p. 371, he brings forward a solid mass of facts and figures which certainly seem to show that the supposed increase of cancer in recent years is more apparent than real. He attributes the fact that a greater number of deaths are now registered as due to cancer to improved diagnosis and more careful certification. This is comforting as far as it goes. But the fact remains, as Dr. Newsholme points out, that cancer is among the most deadly diseases in the Registrar-General's list. It claims nearly four times as many victims as typhoid fever, and has a larger annual death roll than either measles or whooping-cough, although it has a much more limited field for its baleful activity than either of these deceases. It causes about 6 per cent. of the total deaths registsred among males, and more than 7 per cent. of those among females, at ages over forty-five And there can be little doubt that the registered mortality represents only a part of the havoc wrought by this most justly dreaded of all diseases.

CAN CANCER BE CURED? A few years ago this question could only have been answered with a despairing negative. But now, as may be learnt from Mr. Watson Cheyne's paper, published at p. 463, a far more satisfactory answer can be given Surgery can eradicate cancer in certain situations, whilst in a large number of cases it can give the patient a longer lease of fairly comfortable life.

Even in cases which are "past all surgery," Dr. Coley, of New York, still holds out a hope of relief from the use of the mixed toxins of erysipelas and bacillus prodigiosus, as described in his paper on "The Treatment of Operative Cancer," published at p. 497. Although in the hands of other surgeons the treatment has not been so effective as in those of Dr. Coley himself, in a disease so desperate as cancer, a doubtful remedy is better than none, and we are not justified in neglecting any chance however slight it may appear. By doing so we will only deliver the unfortunate sufferer into the greedy hands of the quack.—*London Practitioner.*

A PLEA FOR THE MORE CORRECT APPLICATION OF THE EMMET METHODS IN PLASTIC SURGERY.

BY W. D. HAGGARD, JR., M. D., NASHVILLE, TENN.,

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The brilliant achievments in abdominal surgery have so far outshone the humbler plastic operations, that their perfection has been very much impaired. The apothegm that "whenever anything is as good as it can be, it cannot get better," is particularly applicable to the work of the early school of gynæcologists. It is equally axiomatic that when progress approximates perfection, it ceases to improve, and decadence ensues.

Plastic surgery of the vaginal walls and cervix uteri of the present, is a polyglot of many methods, widely differing in principle, and hopelessly diverging in practice. It is usually the *bête noir* of the practitioner, the unfruitful field of the general surgeon the *négligé* work of the gynæcologist. It is not that we love it less, be it said, but that we love major work better. In addition to these obvious reasons for the deplorable lack of excellence in much of this class of work, and to the general apathy in this department of surgery, there are more material and serious impediments to perfected results A somewhat exaggerated idea of the importance of the perinæal body so-called the lingering belief in its similitude to the keystone of the arch, in its office of supporting the uterus; the failure to appreciate the rôle of the pelvis fascia in maintaining the integrity of the pelvic floor and its functional relations; and more especially the failure to grasp the results of its injury and the mechanics of production of rectocele together with the exact methods for its correction. Finally the employment of other suture material than silver wire. Even when these elementary facts and their significance are known theoretically the mechanical difficulties in meeting the anatomical and physiological indications are very considerable. More, perhaps, than in other surgery. It has been said that much of modern surgery tends to dissociate it from the characterizing manual dexterity from which it derived its name. Yet the substitution of instrumental for manual manœuvres is essentially necessary in the class of operations referred to. Its successful execution requires a special aptitude, nicety of judgment, delicacy of manipulation, and the inherent modeling and coaptation of parts which is signified by the word plastic. In this branch is found one of the highest exemplifications of science wedded to art, because the creative feature, the object to be attained, and the highly artistic means of attaining it, preeminently stamps it as essentially an art.

Plastic surgery received its first impetus from the pioneer work of that great master, Sims, when in 1845 he made the brilliant cures of vesico-vaginal fistula on the patients whose fortitude and high courage entitle them to share something of the gratitude of posterity for participating in those wonderful discoveries that made lacerated woman whole.

It is a unique circumstance in the annals of surgery that the instruments which made the feat possible, and the fundamental principles of his success, have remained unchanged.

It is not so much the tribute of homage to unprecedented genius, as the truth of the great principles he enunciated, and the perfection of his devices. It may be said, then, that the surgery of vesico-vaginal fistula has remained unchanged since the operation for its relief was given to a waiting world by its incomparable originator. It is a subject of regret that more of our art has not become crystallized into such classic perfection.

Trained in this embryo school, under the great Sims himself, possessed of a remarkable sense of adaptation, great patience, untiring energy, and a delicacy of touch rarely seen in a man, was Thomas Addis Emmet. He utilized his unaparalleled opportunities in extending the application of the methods of Sims in fistula to injuries of the adjacent soft parts.

In 1871 he read the historic paper on "Laceration of the Cervix as a Cause of Disease," which swept away the mythical "ulcer of the womb" from the nosology of disease, subtracted much from the sum of woman's sorrow, and forged the second link in the immutable trio of perfected plastic operations.

It would seem that an operation so accurately described, so universally practised and by so many men, would be more correctly performed. Yet I have seen many operators simply cut out a variable plug in the angles of laceration and sew it up by through-and-through sutures, very much as one would the corners of the mouth. No attempt was made to remove all the cicatricial and cystogenic tissue or to maintain the conical form of the cervix. In addition to attention to these cardinal points it is extremely essential to preserve the continuity of the cervical canal down to the new external ostium, and in the suturing to avoid the formation of pockets which are caused by leaving irregular recesses unapproximated by the sutures. The denudation is the scientific aspect; the suturing the artistic consideration. The hard cicatricial plugs in the angles and the oft-associated honeycombed condition of the cystic tissue, require careful excision with the sharp-pointed curved scissors, and very often amputation of the cervix. The *raison d'être* of the operation is to remove all abnormal tissue. It may be compared in one sense to a sequestrum of bone and the further analogy of the necessity of complete removal be carried out as we do in necrotomy. The hard tissue can sometimes be peeled out like a corn in one piece. The finger can best tell when all diseased tissue is removed. A proper appreciation of this fact causes one to regard instruments made to bite out an arbitrary piece of tissue as a biscuit cutter does, as extremely crude and in discord with the harmonizing indications and operative corollary.

The sutures when introduced to close the excavations are arranged like the ribs of a palm-leaf fan, the undenuded strip which is to constitute the new canal forming the rallying point and each suture making a lesser angle with it until the last one on each side is almost parallel with the margin of the cervical canal.

The difficulty of passing the needle underneath the deepest portion of the excavation and drawing out the point of the needle when it presents, is overcome by pulling up the bottom of the cervical stump so that the needle may be shoved along on a plane and the point elevated. Counter-pressure made with a tenaculum will facilitate the passage of this needle without breaking and tedious delay.

When the site of the proposed canal on the everted anterior and posterior lips are felt to be free of hard tissue, then the original operation of Emmet, bilateral trachelorrhaphy herein described, will suffice, no matter how deep the laceration. However, the majority of cases seen at the present time requiring operation, are the ones with large hypetrophied cervices with undurated tissue containing numerous cystic follicles. The rule "to remove all morbid tissue" when applied in these cases, necessitates an amputation of the cervix. It finds its analogy in the indication for removal of hypertrophied indurated tonsils, the relic of recurring inflammation. We also know that if we do not remove all dense cicatrical tissue in the cervix that it will be only a resection of the disease and the vaginal flaps will be brought over morbid tissue as a prepuce. Amputation can be substituted for trachelorrhaphy at any moment of the operation. The excision should be conoidal. The sutures so arranged as to pass through the anterior lip and out through the canal. A sister suture through the posterior lip unites mucosa of cervical canal to vaginal mucosa. Apposition sutures through the stumps draw the vaginal flaps snugly over the cervical stump like the cover on a ball.

Emmet's operation on the posterior vaginal wall was of more gradual evolution, but the later operation devised in 1876 does not differ materially from the old trefoil denudation. It must be asserted that Emmet was the first operator to include the rectocele, or indeed, any portion of the posterior wall of the vagina in the operation for laceration of the perinæum so-called. Then the multifarious operations devised for repairing the pelvic floor, or vaginal outlet, which includes the posterior wall of the vagina, are but modifications of his operation. The misconception of the operation for laceration of the perinæum, so-called, is due to two causes: (1) misconception relative to the exact nature and pathology of the injury. (2) The almost insurmountable difficulty in depicting the operation by diagrams, and the impotence of word-description in giving precise directions for its exact performance. The first of these hindrances I consider the gravest, and attributable to the popular idea of the perineal body which Emmet describes as a body that doesn't exist. The essential lesion in injuries to the pelvic floor is a tear of the pelvic fascia which runs along the lateral sulci of the vagina to which it is attached. The tear occurs where it is reflected upon the front of the perinæal muscles, of which it forms the sheath and which it binds together. This condition exists in the tears, indicated by the transverse tears, rectocele, and relaxed vaginal outlet commonly seen in the injury incorrectly designated Laceration of the Perinæum, but more accurately termed Laceration of the Posterior Vaginal Wall. The destruction of the integrity of the pelvic fascia is the sole pathology. The sense of bearing down characteristic

of this condition is caused by the congestion of the blood-vessels consequent upon the lack of support, through the above-mentioned injury to the pelvic fascia, which in its support of the blood-vessels have been likened to "the trellis supporting the grape-vine." The seeming destruction of the perinæal body is really only the retraction of the pelvic fascia which from the loss of support from its sheath, the fascia, is pulled apart by the transversus perineü muscles, like two leaflets of a window curtain separated at the bottom while they remain attached above. The two-fold function of this muscle, to close the vulval cleft during defectation and to assist the dilatation of the sphincter ani, being lost, each stool thus find an imperfectly dilated sphincter, an unclosed vaginal orifice, a weakened recto vaginal septum, a convex rectal curve all of which predispose to rectocele. The constant eversion of this rectocele by defecation, under the circumstances above enumerated, pulls down on the cervical attachment of the posterior vaginal wall, predisposing to rectro-displacement, which is the first step toward descensus. That the destruction of the pelvic fascia is the essential cause of rectocele which in turn produces consecutive prolapsus, is proven by the fact that women who have true laceration of the prinæum, *i. e.*, complete tear through the sphincter and the rectro-vaginal septum, do not have prolapsus. The utterus is not supported by the perinæum as formerly taught but "is swung from above like all other organs in the body." These women do not have the bearing down found in the class with transverse tears and the laceration of the pelvia fascia. They do not suffer any discomfort whatever execpt from incontinence. The reason of all this is because in the central, complete tears referred, the fascia is not or cannot be involved. This is the inevitable logical conclusion.

The mechanics and pathology of the results of injuries to the floor of the pelvis may be summarized by the comprehensive reply of a student whom I asked: "Why doesn't a woman with complete laceration of the perinæum have prolapsus?" He replied ingeniously: "Because she has no rectocele." "Why has she no rectocele?" "Because the pelvic fascia is not torn."

The converse of these propositions is of course true, and these brief statements comprise much of the unwritten mechanics of many displacements as well as the essential pathology of laceration of the pelvic floor.

The rational correction of this complex condition, then, would be not to sew the labia together, which is the popular procedure in one class of operations, nor to denude an arbitrary area of fanciful shape on the rectocele and bring the edges of the raw patch together, after the fashion of another class. It would rather be in the language of Emmet "to catch up the retracted pelvic fascia at such a point and in such a manner as to 'take in the slack' as it were of the fascia throughout the pelvis. By this procedure the displaced posterior vaginal wall is certainly lifted up and drawn forward in contact with the vesico-vaginal septum. As the steps of the operation advance the displaced anus is lifted upward and forward, the everted tissues at the vaginal outlet gradually rolled in and the separated levator ani muscle brought together."

I shall not attempt a detailed description of the technique, because I realize the futility of conveying a composite idea of the method, which, to be properly understood, must be seen, preferably at the hands of the venerable Emmet himself. I am not unmindful that this good fortune has been enjoyed by many present. I will simply attribute a few of the essential features.

Based upon the conception of the injury outlined in the foregoing, the first and important step is to determine that point on the rectocele which when drawn down by a tenaculum will present a triangular, trowel-shaped area marked laterally by two folds which lead up to fixed points in the lateral sulci which mark the limit of retraction of the fascia. If this is not determined with precision it is obvious that any attempt at reuniting the sundered and retracted fascia, thereby restoring the equilibrium of the circulation in the pelvis and drawing together the separated levator muscles, will fail and the whole object of the operation be defeated.

This tongue-shaped portion of the posterior wall of the vagina when drawn down will constitute the new posterior vaginal wall because the denudation will include that part of the rectocele marked laterally by the highest caruncle and below by the junction of mucous membrane and skin, extending above into each lateral sulci to the triangular fixed points before referred to as indicating the extent of retraction of the fascia.

The denuded area, diagrammatically speaking, would correspond to the space between the straight lateral and oblique middle legs of the letter M, the ends of the lateral legs being connected by an exaggerated semicircle. The space above and between the two oblique middle bars of the letter M would correspond to the undenuded tongue-shaped portion of the rectocele, the angle formed by the junction of the outer and middle legs would correspond to the fixed point and the outer bars to the limit of retraction of the pelvic fascia as previously determined. The semicircle connecting the lower ends of the letter would designate the junction of skin and mucous membrane.

The sutures that unite the two lateral triangles, and thus catch up the retracted fascia, are introduced in the shape of an inverted triangle, the basic points corresponding to the points of insertion and final exit at the edges of the denudation and the apical point being in the centre of the denuded triangle at the point of first exit and re-entrance of the suture, where it changes direction. The sutures underneath the semi-circular denudation pass transversely across the area, the first or "down stitch" traversing the top of the undenuded triangle. When the two sets of lateral sulci sutures are shouldered and twisted they not only approximate the edges of the lateral triangles, but at the same time draw up and in the underlying tissues previously everted and displaced. The transverse sutures which draw together the levatores when tightened, draw the circular edges of the denudation into a linear line of approximation. It will be noticed that this entire operation is on the posterior vaginal wall, and hence Emmet's name for it. It has not involved the skin or labia, and the sutures are all *inside*. So perfect and secure is this approximation that I have frequently seen Emmet turn the patient on her side and

for the purpose of demonstration introduce a Sims speculum and retract the perinæum without the slightest disturbance to the newly contracted vaginal wall and in no wise marring the perfection of the result.

The operation for complete laceration through the sphincter is more amenable to pictorial description, and I think is more generally understood. It is the simplest and most beautiful of all the operations for this injury. In its simplicity consists its beauty, and as it is solely instituted for the restoration of the sundered ends and broken circumference of that muscle, no mutilating and arbitrary flap-splitting is done, but the ends infallibly lying under the two dimples are lifted up, laid bare with scissors and united by a suture going behind the sphincter end and drawing the straightened and retracted sphincter into a circle again.

The margins of the recto-vaginal septum are freshened and approximated. It has always been the custom of Dr. Emmet to introduce the cleft sutures before the ones to bring the sphincter together. To show the remarkable versatility of this master plastic mechanic on a certain occasion when he had some of the most distinguished men of the two continents at his clinic, he deliberately reversed the plan of a life-time and introduced the sphincter suture first. He advised those of us who were assisting to him to adopt that practice. I do not know that he has ever publicly recommended that modification, but I take the liberty of repeating his suggestion.

Of the operation on the anterior wall, I will not speak at this time; nor of his inimitable work in making an artificial urethra. This is an acme of adroitness that we cannot hope to duplicate, and fortunately the occasion for its employment is exceedingly infrequent

I cannot refrain from decrying the too general practice of substituting other suture material for silver wire in the cervix and vaginal walls. This innovation in plastic work is due to the invasion of gynæcological territory by general surgeons, who are just emerging from the use of silk as a universal suture material, and adopting silkworm gut for use in all localities where it can be removed. The general practitioner also essays plastic work, bringing to bear the results of his restricted experience in sewing up skin and scalp wounds.

The newer school of gynæcologists who are unacquainted with some of the older and good methods are applying catgut sutures to the cervix to avoid the trouble of removing them and also trusting them in the most awkwardly situated region of the body to protect from infection. The non-use of silver wire is perhaps as much responsible for failure in plastic work as nearly any other factor. It is the only suture that can be precisely controlled in the degree of tightness and, indeed, it can, if accurately bent or "shouldered" where it crosses the line of proposed approximation, be made to constrict the parts in the most delicately adjusted apposition, neither too tight nor too loose. The physiologic peculiarities of the erectile tissue of the genitalia, that of rapid engorgement and depletion, require an unyielding suture material, and one that will permit of the resulting involution as repair proceeds. Moreover, silver wire is easily and surely rendered aseptic and, indeed, is supposed to have the

property of forming an antiseptic salt with the fluids in the tissues in which it is embedded. It can remain indefinitely, and the longer it remains within surgical limits the better the results. Three weeks is the orthodox time for the cervix. The application of silver sutures requires some practice and much patience, and takes a little more time, but the last element is not of much moment in minor work, with good kidneys and expert anæsthesia, which is the only s rt that should ever be permitted, as I recently had sad occasion to realize.

In every branch of art there is a troop of imitators who follow so closely the hall-marks of the original that the specious can scarcely be distinguished from the genuine. So closely are mannerisms copied in literature, art, sculpture, and the drama, that the imitators create a distinctive school. The accuracy of duplication is rendered possible by the faithful and scrutinizing study of the original pattern.

The unlimited opportunities for the study of models in the arts are obviously impracticable in plastic surgery. We cannot all have the privilege of seeing the peerless Emmet, although a distinguished Fellow of this Association says that one who aspires to do such work ought to. I wouldn't presume to say that one must see him or his followers to do good work. I regret that many of his pupils do not or cannot copy his methods, and I don't hesitate to say that those of us who do conscientiously strive to imitate him, fall very short in our poor efforts, but we have at least the satisfaction of having a correct conception of the highest ideals in surgery.—*American Journal of Obstetrics and Gynecology.*

EPISTAXIS—A SIMPLE AND EFFICIENT MEANS FOR ITS CONTROL.

BY BOYD CORNICK, M.D., KNICKERBOCKER, TEXAS.

Recurrent or prolonged nosebleeding occurs sufficiently often in general practice to occasionally prove a nightmare to those practitioners who must rely on the means of checking it which are recommended by most authorities.

Having witnessed, twenty-two years ago, the ineffectual efforts of a specialist to check the hemorrhage in a case of unilateral epistaxis, I naturally felt no little concern when, a few years later, I was called on to arrest a bleeding from the nose of some twenty hours' duration. The means finally resorted to (with success) was a strong astringent injection, by means of a postnasal syringe, the tip of which was inserted through the mouth into the upper pharynx, behind the velum palati, the fluid flooding the floor of both nasal passages, and flowing out of both nostrils anteriorly. But there is a better and simpler method than this, if I may judge from its prompt success in some half dozen severe cases encountered since then.

So late and so good an authority as Struempell's "Text-book of Medicine" (revised edition) recommends plugging the nares with absorbent cotton. In all the cases in which I have known this measure to be adopted the result was a failure. Perhaps it was not done *secundem artem*. And perhaps, with so unsatisfactory material, this method requires more skill than most practitioners—and some specialists—possess.

My treatises on general surgery, on the other hand, lay no little stress on internal remedies, and fall back on the plugging of the posterior nares with Bellocq's canula as a last resort. Meantime, if they refer to an attempt to plug the anterior nares, it is with the recommendation that a quill, or a fection of a gum catheter, be enclosed in the plug, and that a solution of perchlorid of iron be used to first saturate the plug. Of these recommendations the first is needless bother, and the second produces needless irritation.

There may be constitutional conditions predisposing to nosebleed, which call for internal medication. Plethora or cachexia, co-existing with epistaxis, calls each for its own appropriate treatment. Nor is it my purpose to deal in this paper with those cases of intermittent nosebleed, occurring in adolescence, without debilitating the patient, nor with that class of patients in later life where, because of contracted kidney and arterial sclerosis, an occasional profuse epistaxis acts, as a safety valve in the steam engine, by preventing a degree of intra-arterial pressure which threatens apoplexy.

The class of cases which I have encountered, though generally presenting evidence of some constitutional disturbance of the normal condition of the blood, or of the normal blood-pressure, has likewise given evidence of a localized solution of continuity in the nasal mucous membrane itself. In all such cases, were the lesion situated externally, so as to be easily

visible and readily gotten at, what authority would lay stress on internal medication to constringe the arterioles, as an aid to checking the hemorrhage? What surgeon would propose astringent or styptic applications to the bleeding site?

It is because the site of the lesion, in most cases of even persistent epistaxis, while not easily visible, is nevertheless as easily subject to compression as though on the external surface of the body that, in all the cases I have encountered within the last fifteen years or more, compression of the bleeding site has been as readily accomplished, and has been as promptly successful, as though it had been located on the external surface.

All that I have found necessary has been to fashion with a pair of scissors a dry plug of prepared sponge, in size and length comparable with the little finger of a twelve-year-old boy. This should be carefully soaked in boiled water, to free it of grit, squeezed dry to free it of unnecessary fluid, and inserted its full length, gently, along the floor of the bleeding nostril. No styptic is necessary; it would be needlessly irritant. The expansive pressure of the soft sponge against the bleeding site, increased by the coagulation of a few drops of blood in its interstices, will check the bleeding at once. Remove it in twelve hours. Under no circumstances let it remain longer than twenty-four. Melted vaselin containing .5 per cent. of carbolic acid, applied with a medicine-dropper in liberal quantities is the only local treatment called for afterward.

Xeroform in Corneal Ulcer.—Marcinowski finds that xeroform is much preferable to iodoform in the treatment of corneal ulcer. Having succeeded with xeroform in a case which had previously given bad results with iodoform, he has since relied solely upon the former, with uniformly good results, both in ulcerations and in dressings for corneal injuries. Wounds heal quickly under its influence without leaving a scar.—*Therap. Monats.*, xii., 38.

The Conditions of Uric Acid Formation.—Dr. J. Weiss *Ztsch. für Physiologische Chemie*, Bd. 25, Hft. 5 and 6) has found that the addition of 1½ lbs. of cherries, 1 lb of strawberries, or 2 lbs. of grapes, to an ordinary diet, causes a diminution in the amount of uric acid excreted, which is sometimes reduced to even half the normal quantity. Of the three fruits mentioned, cherries produce the greatest effect.

In order to determine which ingredient of the fruit it is that influences the uric acid output, the writer administered separately tartaric acid, tannic acid, sugar, and quinic acid. The latter alone produced the the results noticed. The amount of hippuric acid excreted was increased at the same time. Greengages were found to be specially potent in this direction.

It is possible that the quinic acid produces its effects by diminishing leucocytosis.

The results are of interest for their bearing on the dietitic treatment of gout and gravel. They confirm the experience of Linnæus, who found a "strawberry cure" a means of ridding himself of gout.

A COMMON CAUSE OF CRYING IN THE NEW-BORN.

BY THOMAS S. SOUTHWORTH, M.D.

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On the evening of November 29, 1898, a primipara was delivered of a strong male child, which cried lustily and, after being bathed, fell asleep. As the mother's breasts were well developed and the child strong, instructions were given that the child be put to the breast every six hours for the first day, and every four hours the second day, and that boiled water, sweetened with cane sugar, be given every two hours between the nursings.

It subsequently transpired, that as the child slept soundly between the nursings, the latter part of the order was disregarded entirely or the water given but a few times. At noon on the third day word was received that the child was sick, and on arrival at the house the nurse said that it had cried almost constantly for the past eighteen hours as if suffering from colic, sleeping but little and passing no urine since the early hours of the morning.

When the child was undressed for inspection marked priapism was noticeable, and the placing of the somewhat cool hand over the region of the bladder was followed by the discharge from the penis of some four to six drachms of urine of so turbid brown a color as to attract the attention of all present. This left a yellowish brown discoloration upon the napkin with no traces of pink. Priapism immediately ceased, and the child who had before been crying steadily fell into so sound a sleep that the subsequent examination did not awaken him. The thermometer placed in the rectum registered 102.6° (inanition temperature?). A weak modification of milk was ordered to be given every four hours alternating with boiled water after taking the breast. These, however, were again not given as the child thereafter slept soundly after each nursing. The rectal temperature the following morning had fallen to 100°.

The so-called uric acid infarctions of Virchow formed by the deposits of uric acids and urates in the straight tubules and papillæ of the kidneys in the new-born infants have been recognized for some time as a possible source of irritation as they remain *in situ*, or are washed out by the scanty secretion of urine. Most modern text-books make some mention of the subject although it is frequently incorporated in the section dealing with the formation of calculi. Yet it is rare to find the practitioner who thinks of this cause of crying in infants, unless it be *post facto* from the colored stains upon the diaper.

It is extremely probable that much of the supposed pain of colic in the new-born for which they have, from time immemorial, been dosed with fennel and other aromatic teas, is due to these sources of irritation in the kidney, ureters, bladder, or urethra. Boiled water, which should be given to every infant at regular intervals, for more reasons than one, pending the establishment of lactation, will dilute the urine and prevent or alleviate the discomfort. The rather unusual opportunity afforded the writer of observing matters in this case, together with the subsequent course of events, point clearly to the urine as the cause of the crying, whereas, had no such observation been made, hunger and inanition might readily have been considered a sufficient explanation of the symptoms.

TREATMENT: AN IMPORTANT POINT.

At the present time the function of the physician is the treatment of disease. For this the doctor is called in. Prevention may be the first duty. It is now only the ideal practice. Time will doubtless greatly develop preventive medicine. To-day the doctor treats or "cures" diseases. The term cure, however, in this connection is going greatly out of use. It has been said that nature cures, the doctor having placed the patient in the best possible condition to favor natures efforts,—instructed the patient how to live and remove and avoid the causes which have given rise to the disease, etc. But that is not the whole truth. Man is in a large measure above and superior to nature. He not only obstructs and thwarts her rules and course, but he may often guide and assist her efforts.

Usually, however, the first object of the physician, and that first expected of him, is relief from the disease—from any urging symptom or symptoms: it may be from pain, localized, or general, as in influenza, or from nausea, or high fever, from sinking or marked failure of the vital powers, from hæmorrhage, obstructed respiration, etc.

When any one of these symptoms is excessive, it is very desirable to give relief as soon as possible, by any means at command—means, however, when possible, which do not jeopardise the future condition—the future health and life of the patient.

And herein is perhaps the crucial test of the physicians' skill; herein is his acuman and knowledge and judgment most severely exercised and tested. How far shall he go with remedies for giving immediate relief at the risk of the future? How far shall he draw, or overdraw, on the patient's savings-bank of vitality for present pressing needs at the risk of future financial embarrasment? How far shall he resort to narcotics, or antipyretics, or stimulants? The physician is tempted to display his skill and gain or strengthen the patient's confidence in him by giving at once if possible complete relief. The countless new remedies in the medicine "market" particularly for relieving pain and reducing fever, add to the temptation.

And countless, for often doubtless unrecognized, have been the fatalities, it is to be feared, from this line of practice, fatalities even amongst physicians themselves, More especially has this been the case in respect to the coal-tar preparations.

It has been truly said, we believe by the late doctor Holmes, that the physician puts remedies or compounds "physic," about the nature of which comparatively, he knows but little, into a living organism, about which, especially in its diseased, perturbed state he knows less. Still less, we all know about what may be the effects or consequences, near or remote, resulting from the contact and mingling of the elements of the chemical compound with the physiological elements, cells or structures of the living diseased body.

We may know that in some way the drug will allay the pain—destroy for a time the sensibility of the nerves, and give relief—ease in place of the "disease"; as phenacetine of ten grain doses in la grippe, for example. But how? It is not enough for us to know that simply. We do not, nor can we ever, probably know at what vital cost it soothes the pain. We should at least know before administering the drug that it will not reduce the vitality of the patient whose future health and life as well as present condition has been placed in our care, that its chemical affinities will not destroy physiological or vital affinities that may reduce to a perilous extent, or an approximation to this, the respiratory or circulatory action—that it will not in any way weaken the heart's vital force. It is to be much feared that these powerful remedies not infrequently, if not very often, do a great deal of harm in the way indicated.

What is the physician to do? Or what is he not to do? Briefly, it can only be said, to bring into exercise his most penetrating mental powers, his best judgment, short though the time at his command for the purpose may often be—weigh well the present absolute needs, the future possibilities; and not allow any doubt as to future possibilities to be outweighed by the temptations to relieve the patient of what may not be great suffering but possibly a wholesome lesson, or, especially, by any desire to make a show of skill by giving prompt relief, and which may yet shake confidence at a future time. Sometimes symptoms may need prompt relief, if not entire suppression; but not infrequently, others, such as pain, nausea or fever, when not excessive or causing great restlessness may well be bourne by the patient for a time until relieved less promptly, by safe remedies. An explanation will usually satisfy the patient as to this line of practice, and with many patients to be recognized as the greater wisdom and skill.

Here, it may be noted, we may usually fall in with safety and the prospect of the greatest success with three measures as named by Wassermann, but in connection with the infectious diseases: (1) attention to the diet; (2) hydrotherapeutic means; (3) good nursing.

And in conclusion it may be stated that, the application of heat or cold or both by the skilful practice of hydrotherapy, will, on such occasion give to the physician a power, a safe control over symptoms, which no other line of practice can do.

VALUE OF A HEALTHY BODY TO A HEALTHY MIND.

BY JOSEPH EASTMAN, M.D., LL.D., INDIANAPOLIS, IND.

It is a serious question whether the advancing civilization, with its physical deterioration, has added to or detracted from the sum-total of human happiness. Only a few years ago the proportion of insane to the sane in the State was 1 to 1500. Dr. Rogers, of the Logansport asylum, in a plea for enlarging the capacity of that institution, said that we must provide accomodations for one insane person out of every 650 inhabitants. Surely the time may come predicted by Oliver Wendell Holmes, when the sane will have to occupy asylums to protect themselves from the insane.

It is quite customary for parents to move to towns and cities to educate their children—educate them in what? and for what? and what is education anyhow? If it is to strengthen the mind and weaken the body, to stuff them with knowledge with no wisdom to apply it, I object; if to dicker off health for book knowledge, I protest. If it is to develop the physical as well as the mental, as is suggested by the modern gymnasium in connection with college; if it is to teach the simpler modes of eating, sleeping, and exercise of our ancestors, the art of living according to Nature's laws; if it is to fill the mind with such principles as make the coming generation 'healthier and, therefore, happier; happier and, therefore healthier; to develop brawn as well as brain, I approve.

A cultivation of that genius of industry which in the race of life comes out far ahead of every other type of genius is much to be desired. A healthy body is essential to a healthy mind. A healthy body without a healthy, pure, and happy mind is unthinkable. Matthews in his little book entitled, "Getting On in the World," remarks that in all professions, in all departments of business and trades, the race of life is being so hotly contested, that if one stops to tie his shoestrings he will be run over.

The men who fill the pulpits and draw handsome salaries, or even take in a sustenance for their families, must have strong healthy bodies to nourish and maintain healthy brains. There is such a continual tax upon their vital forces, in reading, thinking, sifting out from the chaff the best thoughts of the best thinkers, with frequent interruptions to visit the sick and dying, and hear the tale of woe of many a poor unfortunate, that even with them it is a survival of the physically fittest. The men who talk to juries must delve deeply into the statutes, and look up all the amended laws, and with the most profound research accumulate all possible evidence in favor of their client, and then, perhaps, speak for hours to convince the jury of the justice of their cause. With the doctor it is such a labor of love that he must not think of self. The merchant and the tradesman are no exception to this rule. The facts are that the laws made for the benefit of the laboring class are intended to catch votes, do not even favor the women, and do not touch a larger number of the toilers of earth—the real working-classes. The eight-hour law for the few aids in making sixteen hours for the many.

The man who does manual labor is presumed to be physically strong. The young man who leaves the plough or the anvil for the store or the profession, thinking he will get a easier job by doing brain-work, will realize his mistake sooner rather than later. Behold the heads of our great railroad system, of our great manufacturing establishments, of our great educational institutions, the representatives of this republic's wealth and brain—they are toilers, and regard it as one of their chief virtues to be numbered among earth's great laborers!

Labor is a pleasurable law in all that deserves the name of real pleasure, all that appeals to man's nobler feelings, and obtains the endorsement of his self-respect; all that adorns the brow of true manhood springs from the activity of human life, Man is so constituted that he attains the acme of pleasure, not in physical action alone, as in the brute creation, not in idleness and ease, but in mental activity, and the more intense the action the more intense the pleasure. Too much rest is rust. To the successful man rest is a species of restless desire to be doing something. The object of every one's existence should be to unfold and perfect his own individuality, and to improve the race. A strong, healthy organization is the first essential to success. Upon this healthy organization depend intelligence, beauty, and amiability; indeed, there can be no strength of body or talent of mind that ill health will not undermine. Self-knowledge must include the body as well as the mind, whether we take the view of the theologian, and think of the heart and the soul as synonymous, or the idea of the physiologist, that the heart is a mere pump for the blood. In a body that is not well balanced the mind soon becomes feeble and is lost:

> Could I but own the universe, and with one hand
> Hold Heaven in span:
> I'd still be measured by my soul. The mind's
> The measure of the man.

Health is accord between all the organs and functions of the body and mind. Disease is discord between organs and functions.

The trinity of health may be summarized: (1) A proper quantity of well-digested and assimilated food to make good blood. The Bible has said, "The blood is the life thereof" (2) An ample amount of exercise (physical movements) to keep the blood in circulation. (3) Full and complete inspiration and expiration to supply oxygen and to carry off carbonic acid.

With regard to the first, it might be well to have in every restaurant and dining-room the motto, "Refreshments for Man and Beast" It was intended that man should be neither herbivorous nor carnivorous, but omnivorous, using a variety of food. The dispositions and propensities of man and beast can be determined to a certain extent by noting the kind of food on which they live There are as many people to-day digging their graves with their teeth as there are drowning their souls in alcohol.

I was called to a neighboring city recently, and stopped at a new hotel, which I was told had cost $30,000, and that it's owner had a hundred thousand more. I asked in what business the money had been made. The answer was, "Educating dogs and ponies." My curiosity was intensely aroused; why such a success? A little later I was asked to make an operation upon the brother of this king of canines, so I watched him with interest while his brother was on the operating-table and more genuine and sincere evidence of kindness of heart I have never seen in the operating-room. Kindness is a great power over men as well as dogs. Wishing to know still more of a character, I asked him to show me his "dog-school," which contained seventy-eight dogs, some ponies and a few monkeys. While doing so he explained to me that he could teach them very little until he broke them of the habit of eating meat; that they were sullen, irritable, and vicious so long as their diet contained meat. Such food developed the brute, not the intelligence of the animals.

My consultation-room has often been the scene of inquiries which reminded me of the dog-trainer's art. The non-eliminated products of nitrogenous food undergoing crystallization cause disease of the blood-vessels. and many a death from apoplexy. Indigestion is spoken of as an American disease. This disease may be attributed in a large measure to the food being swallowed too rapidly; the stomach not being given time to half do its work of digestion. With bad digestion all manner of poisonous ptomains are produced, the absorption of which not only impairs the blood-making process, but poisons the citadels of life, rendering the individual mentally and physically unfit for the duties a wise Creator had intended him to perform.

The Universities of Cambridge and Oxford, of Harvard, Yale, and Princeton, have graduated many a one who did not even know what to eat or how to eat it. As a matter of fact, it is more important to know what food to eat and how to eat it; how that food digests, is transformed into blood; how that blood flows; something of the molecular and atomic changes upon which secretion and excretion depend, and by which the phenomena of life are continued, than to be able to parse a Greek sentence, or know how to trace the constellations in the heavens, or to find the whereabouts of an ursa major or an ursa minor.

Barring the possibilities of getting tuberculosis from tubercular cows, milk as an article of diet has two very strong recommendations: (1) It contains all the different constituent elements which go to make up each and every tissue of the body. It especially provides lecithin to to feed the famishing nerve-cells. We all lived on it for a time, when we first came to this country, and then we had dimpled cheeks and dimpled fingers. There is a good deal of jesting about the Bostonian and New Englander living on baked beans, but beans, next to milk, come nearest to nourishing each and every part of the entire human system, and no one part in particular more than another. The pills which have been taken to relieve conditions resulting from lack of proper diet and exercise, would, if showered from the skies, maintain a hail-storm over this country for days.

We view with admiration the wonderful inventive genius displayed in the engine, as it faces a thousand miles of rails, with nerves of steel, with blood of steam and breath of fire. The combustion of coal originates the propelling force. So the baked beans, mush and milk "johnny-cake," hominy and apple-sauce in New England stomachs, producing healthy physical organizations, strong and inventive intellect, are in some degree to be credited with the continent being cobwebbed with railroads, running over bridges, tunneling mountains, and keeping up with enterprises, admired and applauded by the civilized world.

Healthy bodies and healthy minds cannot exist without good sewerage. "If disease is bred from bad drainage and defective sewerage from without the body, how much more from bad drainage and defective sewerage from within the body. Excretions retained in the body ferment and decompose. The pestilential gases thus generated dissolve nerve-centres and paralyze the action of vital organs. Here cause and effect aid and abet each other." Regular and unconditional attention and obedience to Nature's demands should be given with more fidelity than a business man heeds a notice that his paper is to be protested in the bank. For in the latter instance creditors near and far would rush in and destroy his financial hopes, whereas in the former case, a liver, a stomach, a heart, a pair of lungs, or other viscera, having labored long and faithfully to ward off the approach of disease, subsisting meantime on blood poor in albumin and red corpuscles, are compelled to go into pathologic bankruptcy when blood from which bile, gastric juice, and lymph are to be formed comes to their respective laboratories so loaded with poison absorded from the excreta.

PHYSICAL MOVEMENTS TO CIRCULATE BLOOD.

Young men are too prone to succumb to that "tired feeling" often induced by that over-indulgence in nitrogenous food, such as meats, and avoid every possible physical exertion, which they so much need. They will ride when they should walk. Some will take more exercise sitting in a chair than others will walking, as in the latter there is no vim and vigor in their movements. Health must be earned; it cannot be bought. I say this in contradiction to the wonderful promises made by the patent-medicine vendors, whose disgusting advertisements in our daily press, setting forth in flaming flambeaus of felicitous fiction the testimony and portraits of distinguished people who claim to have been benefited by wrapping themselves around a few doses of "Gripan's Gabules," "Giddy Stinkham's Vegetable Compound," "Dr. Billiam's Pale Pills for Pink People," and "Nervy Eura's Greens for Green People," and other forms of "laly-ke-dope" *ad nauseam.*

If they ride a bicycle it does not give circulation equal to that which one could induce by a brisk walk. They ride through the country as fast as a coyote over the prairie, and on returning describe what beauties of nature they have seen about as well. The mind is so occupied in guiding the wheel, there is little mental relaxation. Examination of soldiers in

New York disclosed the fact that bicycle riders had weak hearts, necessitating the rejection of a considerable percentage of applicants for enlistment. Frank Hamilton said: "The best thing for the inside of a man is the outside of a horse." The "tired feeling" which so many young men have makes it seem too great an undertaking to even climb on a horse's back. Physicians will tell you that to cure an old, chronic case of dyspepsia, as a job, is no "walk-away." I insist, however, that some of the worst cases of indigestion can be "walked away." The increasing demand for treatment by massage, Swedish movements, physical culture, in our sanatoriums, suggests the thought that much of this might have been prevented had the individual kept his blood in proper circulation by muscular activity.

With regard to the third proposition, that the blood must be purified by free chest-expansion, let me say that any man's capacity for physical and mental endurance is in direct proportion to his chest capacity. The college-student too often becomes full-chested in the back, where his projecting shoulder-blades suggest the sprouting of angel wings, and a tendency toward the spirit land. The man who can go without several meals in succession, lose two or three nights' sleep, do two or three days' work in one, mental and physical, is the man who has swept the cobwebs out of the basements and garrets of his lungs with good, full breathing. There are many young men in the cities who never draw a full breath from one year's end to the other; not even as much as a sigh when the bicycle dealer demands payment on that wheel, or the landlady insists that his board-bill is overdue.

The nervous system must be renewed by sleep. Courage versus cowardice is on the bulletin-board of life. The heart to dare, the head and hand to do, are soon exhausted without Nature's sweet restorer, balmy sleep. The Apostle Peter was cold, had lost sleep, and lost courage when he denied his Master. Given Peter a night's rest, a good breakfast and a cup of good coffee, the cock might have been crowing on to this time, with Peter standing up and swearing that the lowly Nazarene was a friend, and he would never go back on Him.

Our bodies contain thousands of nerve cells, and each one is a citadel of life. The cell has an affinity by which it attracts from the passing blood-stream, and stores away within itself, a sufficient amount of nutrition to maintain accord between all the organs and functions of the healthy body. With every thought, emotion and effort we expend a certain amount of vital force. Consequently, while awake we are constantly using up this energy; while asleep or in a passive state we are left to nature's own law of action, and it is a natural law. While in a normal condition the nerves attract and draw vital force, and are constantly accumulating this vital energy around their nerve-centres, we are vitalized and refreshed during sleep, or in a passive state we are preserving what is already accumulated. Birth, development, maturity, and death is the simple story of every animated thing. During the growth and development of the young man's body, at least eight hours' sleep is necessary, and it should be started at 9 p.m. The sleep-train should be started promptly on time and have the right of way. Convince

me what a young man eats and drinks, how he spends his evenings, and what books he reads, and I will convince you what music, if any, he will ultimately make in the grand orchestra of life. Holmes says the truest lives are those cut rose-diamond fashion, with many facets, answering to the many plain aspects of the world about them. Society is constantly trying to grind these diamonds to a common flat surface. It takes strong manhood to maintain originality and individuality, despite alluring fickle fancies of city life.

An absolutely healthy body cannot exist without an absolutely healthful and happy mind. The possession of a healthy, happy mind will depend less upon the head you have on you, than the heart you have in you.

A happy mind is essential to a healthy body. Solomon says in his Book of Proverbs: "A merry heart doeth good like a medicine." It is easier for some people to be happy than it is for others. A good digestion is conducive to a happy mind. A happy mind is one of the most potent agents in a good digestion. Some one has said: "Whether life is worth living depends on the liver." This is true of that organ under the ribs on the right side, with five lobes, and five ligaments, and five fissures, and weighing nearly five pounds; it is particularly true of the life of the liver. I picked up the other day a prescription for happiness, which reads as follows: "Do not keep the alabaster boxes of your love and tenderness sealed up until your friends are dead. Fill their lives with sweetness. Speak approving, cheering words while their ears can hear them, and while their hearts can be thrilled and made happier by them; the kind things you mean to say when they are gone, say before they go. The flowers you mean to send for their coffins, send to brighten and sweeten their homes before they leave them. If my friends have alabaster boxes laid away, full of fragrant perfumes of sympathy and affection, which they intend to break over my dead body, I would rather they would bring them out in my weary and troubled hours, and open them, that I may be refreshed and cheered by them while I need them. I would rather have a plain coffin, without a flower, a funeral without an eulogy, than a life without the sweetness of love and sympathy. Let us learn to anoint our friends beforehand for their burial. Post-mortem kindness does not cheer the burdened spirit. Flowers on the coffin cast no fragrance backward over the weary way." Every life has its dark days and its darker hours. If we would have others to make and put sunshine into our hearts and lives, we must think of some one else whose lives we can make happier by word or deed. It is really the best source of happiness. Happiness consists in making others happy:

> The microbe trembles, when he sees
> A body cheerful and at ease.

I can never believe the man who sits on the fence and wants everything done some other way is healthy in body and mind. If you look for dirt you are sure to find it. Human life is by no means immaculate. But, none the less, the world is full of purity, of innocent childhood, glorious womanhood and noble manhood.

Who would have the orchestra of life made up entirely of piccolo or bass drums? Variety is life, monotony death, to the human soul. If you want the job of making everybody do as they ought, the job is open, with a placard on the door of the shop, "Help Wanted." If you would raise yourselves above the common level of mankind, you must seek for virtues and not vices in your fellow-men. If you would poison the mind and body, make yourselves miserable, and all around you miserable, rake up the vices and shortcomings of all your associates and neighbors. As your life-work moulds your thinking, and as your thinking moulds your countenance, by the time you are forty you will wear the countenance of a pessimist, critic, and hypocrite, and be shunned by all those who love humanity and are seeking by love to raise their fellow-men to a higher and happier plane.

It is not only important that you do not become hypercritical of others, but that you do not allow your digestion to be disturbed, or your usefulness in life impared, by cringing like a weak and worthless puppy because of the criticism of others. Do not become cringing cowards, nor truckling sycophants. No man ever struck out to do something for himself, for humanity, or for God, without having a pack of dogs barking at his heels, and the more he rose above the common level of his fellow-men, the more their envy, jealousy and malice made them snarl and whine. They had Grant "drunk,' Sherman "crazy," and Lincoln "an idiot" for not dismissing them. See how time adjusts things and glorifies these names No man's character can be essentially injured except by his own acts. You will at last get the reputation you merit, and reputation is the shadow of character.

Brave men and women are healthy, cowards are sickly. The coward whose mind is in a dungeon of fear and apprehension, suspicious of everybody, suffers death a thousand times. Heroes never taste death but once. The world at last admires the strong character, one who, tested in the crucible of truth, comes out a piece of crystallized manhood:

> Fit for the highest or the lowliest lot,
> Self-poised, imperial, yet of gentlest ways;
> At home alike in palace or in cot;
> True to his aim, though others blame or praise.

See how the world to-day applauds that combination of healthy mind and healthy body, that vigorous body, that human dynamo, Roosevelt. What a record to be proud of is being shown in the recent war by General Miles, General-in-Chief of the army, who left mercantile pursuits in Boston, joined the army in 1861, and at twenty-five years of age commanded 25,000 men! These men are good illustrations of what a combined healthy body and healthy mind can accomplish. However, future wars are to be too short to enable men to achieve much in fame, for the reason that to have the war long continued there must be Americans on both sides of the line of battle.

Some years ago I had the pleasure of going from Munich in Bavaria to the great passion-play of Ober-Ammergau. It was necessary to go the day before in order to be there in the early morn at the beginning of the

services. The thing which impresses every visitor is the absolute absence of the artificial modes of life of our cities. Though the village has been there for hundreds of years, the same simple modes of living have remained unchanged. On retiring for the night I climbed up a ladder to a nice, clean bed in the attic of the little house. In the morning I sat at the table and noted the simple and healthful food. I sat all day and watched the play, the trial, the crucifixion and resurrection of the Savior; some forty young ladies upon the stage at one time, singing, their cheeks aglow with the banners of health and beauty; their voices pouring forth music which fairly echoed from the surrounding snow-covered Alpine peaks. When thinking of this simplicity of life, I could not help marking the contrast with the deterioration of health and morals in the cities, London, Berlin, Vienna and Munich, through which I had just passed. In this village they still cling to natural modes of living, to Nature and to Nature's God. On trees and fence corners, along the winding way to the village, on the street corners, and on the higher mountain peaks, you can see their Roman crucifix. While, nominally, Bavaria has a King, and Germany an Emperor, the inhabitants of this village, in the simplicity and purity of their lives, believe that God is King of Kings and consequently their King.

We look with wonder and admiration upon the great monument in our circle. We see with absorbing interest how the sculptor's chisel has made the cold, inanimate marble almost to smile with animation. We sometimes grow envious of the painter's art, by which the dull canvas is made to glow with human life; but what high art can paint the beautiful pigment of the blood, as shown in the blush of beauty, in the crimson of shame, and the pallor of fear? The gorgeous hues of autumn, the golden glories which the Sun Queen gathers about her as she sinks to rest beneath the western horizon, give no tint of beauty comparable with the ruddy cheek and ruby lip of health.—*The Dietetic and Hygiene Gazette.*

THE PROPOSED EXTINCTION OF TUBERCULOSIS.

The confident hopes now entertained that tuberculosis can be exterminated as a disease, and the present active interest in the subject of its prevention, are facts of the times worthy of serious consideration. It may be well to study also certain other facts that may be encouraging in some of their aspects, and yet not altogether so in others. The bacillus of tuberculosis is, perhaps, of all pathogenic microbes the most widely disseminated—no one in our civilization is absolutely free from the possibility of its infection. It is said that the results of postmortems show that from two-fifths to over one-half of all persons dying from whatever cause, that come to the autopsy table, give evidence of tuberculous infection in the lungs—the region where the germ exerts its most deadly action—and this result has been confirmed in the living by the X-rays (KELSCH). This goes to prove that while the tuberculous germ is everywhere, and that while it finds a favorable soil for its development in the lungs of a very large proportion, if not a majority, of mankind, in only a minority is it able to so far overcome the vital resistance of the organism as to develop its most damaging and fatal effects. The majority of mankind appears to have required a partial or total immunity to this pathogenic species.

It appears to be also a fact that tuberculosis has within the past few decades been diminishing in importance as a factor in human mortality. This has, doubtless, especially of late years, been due in part to our better knowledge of the nature of this special diesase and the best means of avoiding and counteracting it; and in this line we may hope for still greater results in the way of both prevention and cure. In part also a better knowledge of general hygienic requirements and improved modes of living have had their share. There still remains, however, another possible factor, an acquired immunity derived from a racial familiarity with the disorder. That such an immunity exists, to a certain extent at least there is ever reason to believe. First, we have in play the natural selective action of the disease itself culling out the defectives and leaving a more vigorous stock more resistant to its own attacks; second, the analogy with other diseases from the more or less completely self-protected ones, like measles or smallpox, to those more remotely such, as typhoid and diphtheria. Then we have the well-known fact of artificial immunization, which is probably paralleled by natural processes, which we see, to some extent, actually at work. Asiatic cholera runs like wild fire through Europe, while in India, where it is endemic, it is hardly a dreaded disorder. Measles, a trivial disorder here, has depopulated the Pacific Islands. The transplantation of diseases to new fields is characterized by their aggravations; microbes, like other members of the vegetable kingdom, grow best in virgin soil.

If this immunity exists, it remains a serious question whether, if we are successful to any extent in our efforts to exterminate tuberculosis, we may not be preparing the way for a greater virulence of the disorder when it does occur. That it can be totally destroyed among us is practically outside of all probabilities; its range in the animal kingdom, both

domestic and feral, is too great to make this even a possibility. Could tuberculosis be made extinct in one part, with modern communications it could not long remain so, and its severity when once introduced would be possibly enhanced. The house, swept and garnished, might be only made ready for a sevenfold more virulent invasion.

It may be well, therefore, to moderate our expectations, while not abating any reasonable efforts for the restriction of the disorder. Improved hygiene, fuller disinfection of houses where tuberculosis has existed, restriction of public expectoration, especially in crowded apartments and conveyances, better instruction of the public as to the questions of infection, heredity, etc., and, perhaps, also notification and registration of cases, are measures that may all be legitimately resorted to. On the other hand, any too rigorous or inhuman restrictions on the unfortunate victims, absolute isolation, muzzling (as has been actually proposed, to prevent infection by the breath), and a host of other inconvenient methods and appliances that zealous reformers have proposed, can only overdo the work and bring it into disrepute. We should remember that under existing conditions nearly or quite one-half of us are or have been tuberculous, and that, fatal as it yet is, consumption is speedily becoming less formidable to the human race, even without the elaborate measures now being devised to combat it.

The Significance of Bell's Phenomenon in Facial Paralysis.—Koster (*Münchener Med. Wochenschrift*, September 20, 1898) discusses the value of phenomenon observed in peripheral paralysis of the poatio dura, consisting in an upward rotation of the eyeball on the paralysed side when the patient attempts to close the eyes. The exact movement was upwards at first inwards and finally outwards. It was described by Bell, but seems till lately to have attracted so little attention that, in 1897, Bordier and Frenkel (*La Sem. Méd.*, September 8) described it as a "new phenomenon." Koster has looked for this symptom in hundreds of cases of natural sleep, hypnosis, narcosis, and paralysis, and draws the conclusion that the rotation of the eye-ball upwards and inwards and then outwards is a physiological act associated with every kind of closure of the eye-lids, but that it is naturally more apparent and striking when the lids are prevented from closing either by paralysis or by the fingers of the observer. For instance, it is always present in central facial paralysis if looked for. Bernhardt *Berl. Klin. Wochenschrift*, No. 8, 1898) states that as the paralysis, especially that involving the orbicularis, improves, the upward rotation of the eye-ball on attempting to close the lids becomes less, and eventually disappears when the paralysis is cured. Koster denies this, the diminution of the rotation being, according to him, merely apparent, depending as it does on the lids closing too quickly for the movement to be noticed. The symptom is, therefore, not in any way pathognomonic of peripheral facial paralysis, and Bordier and Frenkel, Bonnier, Negro, and to a certain extent Bernhardt, who have lately attributed to it a diagnostic and prognostic importance are wrong. The electrical reaction of the muscles is still the only means of foretelling the probable duration of the paralysis.

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Professeur à la Faculté de Médecine, Paris; Médecin honoraire des Hôpitaux; Membre de l'Académie de Médecine.

PARIS, 4th February, 1899.

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EDITORIAL NOTES.

THE special correspondent of the *Lancet* reports that the progress of the plague in India continues on the whole satisfactory. The new cases reported from the Bombay Presidency up to the end of last month showing a distinct falling-off in the death rate. In the city of Bombay, the returns are not so favorable, there being a considerable rise both in the number of fresh cases and the mortality. The disease is said to be increasing in virulency. In the Madras Presidency the situation remains unchanged, but a great improvement since last month has taken place at the military and civil stations of Bangalore.

DR. ALLBUTT believes that however logical isolation may be, it is clearly inexpedient. This view is certainly justifiable, as there seems to be grave doubts as to the logical position. It is curious, but nevertheless a fact, that the biological status of the bacillus of tuberculosis has never been definitely decided. Koch himself assumed it to be a pure parasite, and his views have been accepted without question by most pathologists. There are, however, several points in connection with the question, that are left unexplained by the theory of parasitism, points which lose their obscurity if the bacillus be regarded as a saphrophyte. The question, which is both interesting and important, is extensively considered from a practical standpoint in a work entitled *The Prevention of Consumption*, by Dr. Chandler of Melbourne (Kegan, Paul, and Co.), which may be consulted with advantage by those interested. The necessity, or otherwise, for isolation is really dependant entirely upon the solution of this question. If the bacillus tuberculosis is a pure parasite, then isolation is just as imperative theoretically as it is in anv other infectious disease, but if it is merely an accidental parasite, a saphrophyte, then the necessity for isolation does not exist. This aspect of the matter is, we think, well worthy of the attention of investigators who have the necessary opportunities for attempting to solve the problem.

LORD LISTER'S address at Liverpool, in November last, has prompted the Hon. Stephen Coleridge, who is a prominent member of the National Anti-Vivisection Society, to enliven the pages of the *National Review*, in the December number of that periodical, with an edifying article entitled "Lord Lister's Anodyne." The article was apparently provoked by a passage in Lord Lister's address, which, to the ordinary reader, would seem to be singularly free from objection. The passage in question,

which at the time aroused much vituperation from the anti-vivisectionists, reads as follows: "Of animal suffering I need hardly speak, because, in truth, the actual pain involved in these investigations is commonly of the most trifling description. Anæsthesia has come to the aid of experiments on animals . . . . . and enables needful operations to be done without disturbance from the struggles of the animal, while it affords to the operator the unspeakable comfort of knowing that he inflicts no pain." Mr. Coleridge's complaint is, substantially, that Lord Lister, in using those words, was either speaking of matters on which he was insufficiently informed, or that he was guilty of something very like misrepresentation. This is a strange charge to prefer against one who is no less honoured for his character than he is distinguished by his attainments; yet Mr. Coleridge undertakes the task in a long article, which, oddly enough, opens with an unctuous homily on the value of right conduct. According to Mr. Coleridge, vivisectors themselves have "confessed" to making their observations while their victims are under no better anæsthetic than morphia: with regard to the effects of which Claude Bernard has said that the animal "feels the pain but has lost the idea of self-defence." He thinks that Lord Lister being "the guardian of his own reputation" should "reconcile his statement with the confessions of the vivisectors themselves."

MR. COLERIDGE'S absurd perversion of Lord Lister's remarks would probably have been ignored, had he not sent a copy of the *National Review*, with his own contribution marked, to Professor A. E. Schafer, of University College. The reply, thus challenged from the distinguished physiologist, duly appeared in the January number of the magazine. It is deserving of study as a specimen of what such things should be; brief, lucid, judicial in tone, and overwhelming in argument. After pointing out that Bernard's words, "l'animal reste encore sensible" are properly rendered into English as "the animal still responds to stimuli," and that, as used by physiologists, sensibility is in fact the equivalent of irritability; he proceeds as follows:—"whether or not Bernard really meant by the statement, 'il sent la doulcur,' that such animals are capable of feeling pain in the ordinary sense of the word, I am not prepared to say, but even if he did mean to convey this expression, it is a mere statement of opinion and not one of fact, and is out-weighed by the universal experience of the medical profession and of large numbers of the laity,"

PROFESSOR SCHAFER expresses surprise that Mr. Coleridge should be unacquainted with the merits of morphia as an anodyne. "Every medical man, every nurse, every person who has had to watch the progress of

a painful disease, is familiar with the instant and complete relief from pain afforded by a dose of morphia in one-fiftieth the relative amount which physiologists are in the habit of administering to dogs as an anæsthetic." As Professor Schafer says, it is surely evidence of a weak case that Mr. Coleridge has selected as experiments of a peculiarly revolting character, those in which the animals are absolutely deprived of all consciousness of sensation by the employment of a drug than which no better or more complete anæsthetic exists.

THE *Medical Directory* for 1899, reveals an extraordinary decline in the number of young men who joined the medical profession in the course of last year. It contains 34,994 names, an increase of only 91 in comparison with an increase of 619 in the previous year. The directory for 1897 shows an increase during the preceding pear of 958, and that of 1896 an increase of 730. That the number of new names should have fallen from 619 in the last issue to 91 in the present issue, is presumably indicative of the over-crowded state of the profession, and the great difficulty that prevails in finding suitable openings for young medical men in this country, The distribution of the members of the profession holding British degrees is as follows:—London, 6,117; Provincial England, 15,497; Wales and Monmouth. 1,100; Scotland, 3,394; Ireland, 2,551; resident abroad, 3,795; naval, military and Indian medical services, excluding those who appear in other lists, 2,528.

WHATEVER the cause of the decline may be the increasing popularity of lady doctors is evidenced by the fact that 21 public or official appointments were bestowed upon qualified women last year. Among the important posts thus filled was that of medical examiner for defective children under the London School Board, conferred upon Mrs. Berry, M.D., Lond. At the Camberwell Infirmary, Miss Meakin. M.B., is a junior resident medical officer, and a similar appointment is held in the Chorlton Union Hospital, near Manchester, by Miss Lewin, M.B. Miss Christie, M.D., was appointed on plague duty in India, after having been for some time assistant medical officer at the Greenwich Infirmary, and is now working in Bombay in collaboration with Miss Corthorne, M.D. Four ladies holding distinguished diplomas—Mrs. Colman, Miss Keith, Miss Thorne, and Mrs. Hawkes—are lecturers under the London School Board on health and hygiene. The profession of medicine is obviously fast gaining popularity as a career for women. 47 new students have entered the London School of Medicine for Women since the opening of its science laboratories by the Princess of Wales last summer.

AUTHORITIES have long dilated upon the superiority of brown bread to white, but according to Drs. Lauder Brunton and Tunnicliffe *(St. Bartholomew's Hospital Reports)* the popular preference given to white bread has to a certain extent a sound physiological basis. The higher nutritive value which might, on purely chemical grounds, be ascribed to brown bread cannot physiologically be maintained. Distinctly less nutritive elements pass into the circulation in the use of brown bread; white bread being weight for weight actually more nutritious than brown. In cases of intestinal irritability white bread is to be preferred, but in constipation brown bread may be indicated as it tends to excite peristalsis. If the proportion of mineral ingredients, and especially of lime salts, in other articles of food or drink be insufficient, brown bread is preferable to white. It is possible that in the case of operatives living chiefly upon bread and tea, the preference for white bread which prevails may be responsible, in part at least, for the early decay of the teeth. An abundant supply of mineral constitutents is required in women with babes, and in growing children, and if the dietary is insufficient in fat, or if the subject is unable to digest fat readily in other forms, brown bread may be found to be preferable to white. Drs. Brunton and Tunnicliffe pertinently call attention to the absurdity of taking the mere chemical composition of food stuffs as an index of their nutritive value.

DR. LABORDE, the well-known physiologist, has informed the French Academie de Medicin of an important scientific discovery recently made by M. Georges Joubert. M. Joubert has been endeavouring for some time to solve the problem of how to supply air artificially to a man in a hermetically enclosed space. His hypothesis is that the 79 per cent. of the nitrogen contained in respirable air remains intact after the 21 per cent. of oxygen has been consumed, and that the same nitrogen, if mixed with a new supply of pure oxygen, would form respirable air, if the carbonic acid and other products of respiration were removed, This inference has been found to be correct. The difficulty has been to devise a means of generating the oxygen, and it is claimed that after long research, Joubert has discovered a chemical compound which, by contact with the atmosphere, clears the vitiated air of the impure gases produced by respiration, and furnishes automatically the requisite quantity of pure oxygen. Dr. Laborde states that six or eight pounds weight of this chemical substance will enable a man to live at least 24 hours in a sealed diving-bell. If Dr. Laborde's statement can be substantiated, it is clearly evident that a most important discovery of very great practical utility has been made.

THE SECRETARY OF STATE for the Colonies has written an important letter to the principal of King's College, London, stating that in selecting candidates for the Colonial Medical Service preference should be given (other things being equal) to medical men who have received such bacteriological or similar special training as King's College provides; but that when candidates have been definitively selected they should be required to attend at the School of Tropical Medicine, which is being established at the Albert Dock branch of the Seamen's Hospital, to go through the complete course of instruction that is now being settled by a Special Committee of experts appointed for the purpose. As the LANCET has pointed out, this is the first public departure, of the Secretary of State for the Colonies, from the elaborate and expensive scheme put forth by Sir Henry Burdett in his letter to the *Times* of July 11th; for obviously no fully equipped bacteriological laboratory will now be needed, but merely one for clinical investigation and research in tropical diseases. The necessary requirements for such a school have been clearly set forth by Dr. Glazebrook and Mr. Adamson, President of the Southern Hospital, Liverpool.

MR. A. L. JONES, who has so munificiently furnished the funds for starting a school, in Liverpool, for the study of tropical diseases, in defining the scope of the proposed undertaking said: "They would open a school partly at University College and partly at the Southern Hospital, and would appoint a lecturer on tropical diseases and a demonstrator to deal with the cases and the work. Nurses, who desired, would be trained for tropical service as well as medical men." In this practical way, Liverpool has set to work to carry out Mr. Chamberlain's valuable suggestions. Bacteriological study at the University College, and clinical obervation and research at the Southern Hospital, will be called on simultaneously. As 41 cases of malarial fever have been admitted into the hospital since July, and as Liverpool's trade with West Africa is large and direct, a school of tropical medicine in that city will be most valuable. The London School for Tropical Medicine now in course of building at the Albert Docks will be opened on the 1st October, next.

DR. LEITETSTORFER, who superintended the experiments, proposes that sugar be added to the men's rations in one of the three following ways: (1) as a supplementary allowance, with a view of improving the men's daily rations; (2) as an integral part of the men's reserve store of provisions, and of the supplies for fortresses, hospitals, and ships; and (3) as a temporary allowance for strengthening men, and renewing their vigor on the march. Dr. Leitenstorfer's experiments with men are quite

in accordance with Chauveau's experiments with animals, and as there no longer seems to be any doubt as to the high nutritive and tonic value of sugar, it should occupy a more prominent place in our nourishment. As sugar is found to be specially beneficial in combating and resisting fatigue, it will be found valuable not only for soldiers, but also for others subject to exhausting physical labor, and for growing boys and girls in general. As a substitute for alcohol or wine in all the conditions in which it is now thought fit to serve alcoholic drinks as a stimulant, sugar would seem to be indicated. It affords nearly, if not quite, the same stimulus as alcohol, without the danger associated with the latter; it has furthermore the advantage of being a food of the first order, as, unlike fats, sugar contains a sufficient amount of oxygen for the complete oxidation of its hydrogen.—*Review of Reviews.*

PERSONAL.

Dr. H. B. Andersons left for England last week and will be absent for three months. It is the doctor's intention visiting the principal cities in Europe. On his return he will assume the editorship of THE CANADA LANCET, in connection with a very strong staff. It is his intention to make arrangements with some men of high standing in special work in the old country, Boston, and Johns Hopkins.

Dr. G. R. McDonaugh returned to Toronto a short time ago, after a very enjoyable trip, having visited Gibraltar, Rome, Constantinople and many other cities.

Dr. Ernest Hall, of Victoria, B. C., called on his return from Johns Hopkins. We understand it is the doctor's intention returning to Toronto to take up special work here.

Dr. Richardson, late of Bloor street east, has removed to 10 Carlton street.

Dr. Harley Smith has been laid up for some time from an attack of septicemia. His condition was serious for a time, but, we are pleased to learn, convalescence is now about complete.

Dr. Warner has removed from No. 10 Carlton street to one door north of the corner of Church and Alexander.

Dr. Shepherd, of Montreal, was in town last week, the guest of Dr. Sylvester. During the afternoon he visited the General and Emergency hospitals, and spoke in the most flattering terms of the management and equipment of both these institutions.

Many doctors are out of town this month enjoying the trout fishing in various districts—we wish them luck.

EPITOME OF CURRENT MEDICAL LITERATURE.

SURGERY.

Traumatic Cataract from Pressure of Forceps.—By Edward S. Peck, M.D. (*Med. News*, November 26, p. 689).—A primipara, aged 21, had been in labor 72 hours, and there was extreme uterine inertia under anæsthesia. The high forceps operation was performed, with the result that the right blade fell across the right eye just under the inferior lid. The skin of the forehead was injured a little to the right of the median line, and the helix of the right ear was tightly compressed and turned back, but not torn. There was a large sub-conjunctival hæmorrhage, the whole inferior cul-de-sac of the conjunctiva being filled with blood, and the lower lip correspondingly swollen. The eyeball was softened and flattened from above downward, and of a quadrilateral form. The cornea was steamy, the pupil larger than its fellow, and the pupillary field rapidly changed from a dull greyish reflex to a dense whiteish. Under atropine the opacity of the lens was seen to slowly increase until a soft cataract entirely filled the area of the lens. These changes in the lens occupied about 20 minutes.

On the following day the conjunctival hæmorrhage and swelling of the lid had nearly disappeared. A fully formed milky cataract filled the area of the pupil, ocular tension had increased, but the eyeball still retained its square form.

40 hours after the injury the eyeball had resumed its spherical shape, ocular tension was equal to that of its fellow. On the 33rd day both eyes opened equally well, the cornea had regained its clearness, the soft cataract still persisted.

The child was next seen at the age of 5½ months. There was a soft and diffuse cataract, the opaque spots showing themselves in flocs. The scar on the farehead was adherent to the frontal bone; the helix of the right ear was bent back.

At the age of 7 in the right eye—V = 20/70: with a 1.D. lens, V = 20/50: reads Jaeger handtypes No. II. with a + 2.D. lens, the head being slightly turned toward the light. Left eye—V = 20/11; Jaeger No. I. is easily read at 3 to 16 inches. Right eye has a divergent strabismus of 2½ lines. There is a probability of almost, if not entirely, perfect vision in this eye. The frontal scar was still present, but the integument was no longer adherent to the bone.

A record of any similar case could not be found. The absorption of the cataract and restoration of vision are remarkable.

Amaurotic Family Idiocy.—Hirsch (*Journ. of Nerv. and Ment. Dis.*, July, 1898) reports a case of amaurotic family idiocy, the infantile cerebral degeneration of Kingdon and Russell. The infant, as in the other cases, was Jewish; two other children had died with similar symptoms. The patient was healthy till 6 months old, when he became weak and unable to

sit up. Perception of light was normal; the typical symmetrical white patches at the maculæ were present. Sensation and reflexes were normal. The child became gradually weaker, and died at the age of 22 months. The necropsy showed nothing abnormal macroscopically except an unusual prolongation of the second temporal fissure. Microscopically a striking change was found in the cells of the cerebral cortex and the nuclei of the cranial nerves, and also in the cells of the grey matter of the cord. These cells were enormously enlarged and rounded as if blown up; the Nissl bodies had disappeared. There was some degeneration of the pyramidal tracts. The changes in the grey matter of the cord have not been noticed before, but otherwise the appearances agree with those found by other observers. The changes in the eyes are explained by the same swollen condition of the ganglion cells of the vesicular layer, which are normally arranged in several layers only at the macula, and therefore, being much swollen, cause the opaque white appearance seen at that spot. Peterson (*ibid.*) records another case: The infant was of Russian Jewish family; one other child had died at the age of 10 months with similar symptoms. Blindness was noticed at 4 weeks; there was much restlessness; the patient became weaker; there was some rigidity, with twitchings of muscles, and death occurred at the age of 7¾ months. The fundus could not be seen, and *post-mortem* examination of the eyes was unsatisfactory. The brain showed some defective development, and the cells of the cortex were very small and deficient in number. There were no tract changes in the cord.—*Brit. Med. Jour.*

Neuromata.—Knauss (*Virchow's Archiv.*, 1898. Bd. cliii. Heft 1, S.29) gives particulars of a remarkable case of a multiple true neuroma. The patient was a girl aged 11. The parents were healthy, and had four other healthy children. She was rather small for her age, but stoutly built and of a lively disposition. In her third year there appeared a number of small-swellings under the skin of the trunk. They slowly and uniformly increased in size and number, but were never painful. They looked like flask or bullet-shaped swellings of the skin, distributed irregularly all over the trunk and upper part of the thigh. The head, forearm, hand, leg, and foot along were free. They lay beneath the skin, which was stretched over them. They were not tender on pressure. They were firm and elastic. They varied in size from that of a cherry to that of a hen's egg. The largest was about the size of an orange, and situated just below the umbilicus. There were sixty-three or more similar swellings in all. Electrical reactions along the course of the nerve trunks were normal.

The tumours had capsules and could be easily shelled out from the surrounding connective tissue. Section of the swellings presented a homogenous light yellow transparent appearance, with thin white fibrous-looking streaks running through it. The consistence was firm and elastic. The microscope showed the tumours to consist of nerve fibres medullated and non-medullated, and very numerous ganglionic nerve cells. The non-medullated nerve fibres were by far the more numerous. The

nerve cells were rounded or oval, mostly fairly large. Their protoplasm was granular or clear. A round nucleus was generally present, with clear nuclear substance and a distinct nucleolus. They were not unlike the ganglion nerve cells of the sympathetic, and many of them were seen to have non-medullated nerve fibres coming from them both unipolar and bipolar.—*Edinburgh Med. Jour.*

THERAPEUTICS.

Orthoform and New Orthoform. — Klaussner (*Münchener med. Wochenschrift*, October 18, 1898) draws attention to a new modification of orthoform ("Orthoform neu") introduced by Einhorn and Heinz. The new orthoform has the same action as the original, but presents the following advantages over it:—(1) The powder is more homogeneous, whiter in colour, and does not cohere into lumps to such an extent. (2) It is considerably cheaper, and since its action is manifested in a 10 to 18 per cent. mixture with starch or other powder, its price is no longer prohibitive

Orthoform, though introduced so recently as August, 1897, has proved serviceable in a great variety of painful affections, both external and internal, through the local anæsthesia, which it produces whenever the nerve endings are exposed. Neumayer and others have found that, insufflated in tuberculous laryngitis, accompanied by severe pain, it causes anæsthesia for 18 to 36 hours, allowing solid food to be taken with comfort, and thus improving the general health. Other clinicians have employed it in painful gastric affections in doses of 15 grains, and have found that, while it relieves the pain of gastric ulcer, simple or malignant, with certainty for some hours, it has no action if there is no solution of continuity. On this account it is a very valuable aid to diagnosis in these cases. Good results have been obtained in skin affections such as prurigo or herpes zoster. A 5 per cent. ointment relieves the pain of corneal ulcer. It has also been reported on very favourably by dentists, as relieving the pain accompanying exposed pulp or excavation of carious teeth, and by gynæcologists as a local anæsthetic for curetting or plugging the uterus. Surgeons have praised it as an application to anal fissure, malignant ulcers, and bed-sores. Hirchbruch used it in a 3 per cent. emulsion instead of cocaine for infiltration anæsthesia, and Lob adds it to injections of mercury in syphilis. Orthoform has the great advantage over cocaine of being absolutely non-poisonous.

The Hypodermic Administration of Iron.—Birgelen (*Münchener med. Wochenschrift*, No. 30, 1898) believes that iron should be administered hypodermically, only in cases where it is not tolerated by the stomach in any form. His results were not very encouraging. In two cases there was no improvement whatever, in one the injection caused so much pain that the treatment was suspended. Redness, swelling, and pain were always more or less present after an injection, though other writers have not observed them. In one case a local abscess formed, and

in another the whole arm became swoolen, though it was doubtful whether these were caused by the iron. In two cases the results were very satisfactory.

The preparations employed were 10 per cent. watery solutions, either of ferrum citricum oxydatum or of ferri et ammonii citras. The former caused more unpleasant local symptoms, and the double ammonia salt is on that account to be preferred.

Only Nervousness.—A writer in the *St. Louis Medical Journal*, who signs C. R. B., calls attention to the wrong inflicted by the popular harsh estimate of "only nervously afflicted people."

Doubtless doctors know that a person who is nervous or inclined to hysteria, is in a serious condition; but they make a mistake when they imagine that every one understands the possibilities of such a state The following true sketches are addressed to the doctors who do not wish to be cruel:

A woman working in a hotel had an attack that bordered upon pneumonia. The mistress and her husband, and all the household, felt sorry for the sick woman. She was moved into a room that could be warmed, and was well taken care of for a few days. The writer called about 11 o'clock on the third morning and found this sick woman cold and neglected—no fire in the stove, no breakfast. The first kind inquiry was answered by a smothered storm of tears. Inquiry as to the sudden change from kindness and care to coldness and neglect evoked the information that "the doctor says it is only nervousness."

Instead of pneumonia it was a case of nerves, and the patient was to be left cold and faint and unwashed till she gained strength by some miracle to go down three flights of stairs and dish up her own meal in a hot kitchen. The doctor, when questioned, said: "Yes; she is in a serious state; nervous system all run down; I told them so." This was not quite the same as the report of the doctor's opinion.

The next case was a school girl, away from home in a boarding school. At the beginning of her indisposition teachers and pupils were kind and attentive; but one day the writer on her way to the sick girl's room was waylaid by one of the teachers who said: "Miss So-and-So says Mary must be left to herself. The doctor says she is not sick, only hysterical. You need not bother to go to her any more." Not being under madam's control, the writer went to the girl's room, and arrived just in time to keep the child from crying herself into a fever. The sudden change from care and kindness to neglect filled the child's mind with fears of all sorts.

This doctor, when questioned, was surprised to find that madam had placed such a construction on his remark. He had said she was nervous. "It was no real illness."

Perhaps some day—thanks to public libraries, where every child may have access to books concerning all manner of medical subjects—every one will have a correct understanding of the medical meaning of "only nervousness" and "hysterical." In common parlance they mean selfishness, foolish fear about one's health, a vain wish to create a sensation and "make a fuss."—C. R. B.

DRUNKENNESS OF WOMEN AND THE DEATH OF CHILDREN.

There has recently been in progress in this city a discussion of the liquor question which has given rise to many and diverse opinions on the part of men and women of every station of life. Bishop Potter, speaking at the Waldorf-Astoria, some few weeks ago, raised the storm by referring to the saloon as a social necessity. However, with the social side of the question we have nothing to do, but we notice that one phase was not touched upon, that is the influence intemperance exerts on infant mortality. Dr. Samuel W. Abbott, Secretary of the Massachusetts Association of Boards of Health, commenting on the matter, says: "The records of every country and every city give ample proof of the assertion that intemperance is a direct cause of infant mortality. The poverty, the neglect, the cruelty, which are the inevitable result of a system of licensed saloons, are all handmaids of intemperance. Cities in which intoxicating liquors are sold freely under local option laws have a higher infant mortality than those in which license is forbidden by the popular vote." The London *Lancet*, speaking on the same subject, so far as Great Britain is concerned, remarks that Dr. Ashby, at a recent conference on public health in Manchester, has directed attention to the rate of mortality amongst the children of the lower classes. In Manchester it is very serious. Dr. Ashby is a physician to a children's hospital with a dispensary department in Manchester. Of 10,000 cases admitted into this institution, 4,000 were those of children under two. Dr. Ashby says that the death rate of children in Norway and in the rural parts of England is at the rate of 100 per 1,000 births, while in Manchester it is at the rate of 203 per 1,000, and in some of the congested districts, where poverty, drunkenness, and vice abound, it amounts to 300 and even 500 per 1,000—something like one-half the infants born dying before the age of 1 year." In this country drunkenness, and particularly amongst women, is much less than in Europe, but, notwithstanding this fact, there can, unfortunately, be no doubt that intemperance has a very prejudicial effect on infant life. Sanitary improvements, undertaken at the instance of health authorities, while greatly benefiting the health of the public at large, have done little to limit the death rate of infants, and there is a wide field of labor lying before those whose desire it is to raise the condition of the poor.

HE HANDLES REPUBLIC STOCKS.

One of the most enterprising and successful brokers in Toronto is E. Gartly Parker, who was for some time in Rossland. Mr. Parker is making good use of the knowledge he obtained of this country while in Rossland by devoting himself largely to Republic stocks. He takes big advertising space in the Toronto papers, and is making a fine market for the shares of our best properties. His dealings are on a large scale and he is proving himself a good missionary for us.—*The Republic Miner, Saturday Feb 25, 1899.*

Nervous Vomiting.—This includes those forms of vomiting which are caused neither by anatomical lesions of the stomach nor by quantitative or qualitative changes in the food. It is pre-eminently reflex, and may be caused either directly by the vomiting centre or indirectly from other points in the central nervous system; or from other organs. As far as we know, the causes of this condition may include palpable changes in the brain and spinal cord, kidneys, uterus, liver and certain organs of sense. These forms of nervous vomiting may be classed among the reflex neuroses.

I have had the opportunity of observing two such cases of nervous vomiting in close succession; during their course they seemed to be very much alike, yet the nature of the primary affection caused them to terminate very differently.

The first case was a married lady, thirty-six years old, who had been suffering for three weeks with uncontrollable vomiting and a continuous flow of saliva, together with strong fœtor from the mouth. This condition had come on after an attack of catarrhal jaundice, traces of which were just recognizable in a slight discoloration of the sclerotics at the time I first saw the patient. She had emaciated very little considering that she had taken scarcely any nourishment during this period, for she vomited everything immediately after eating. On examination, nothing could be found anywhere, not even in the liver. The passages were loose and bright yellow. Only temporary relief was obtained by the hypodermic use of morphine with atropine, washing out the stomach with chloroform water, and chloroform internally. Finally, the attacks were controlled by withholding all food and drink by the mouth, and using nutritive enemata for several days. But the salivation kept up some weeks longer, when it ceased entirely. The condition here was probably a reflex irritation from a gallstone; hysteria was excluded because the patient was otherwise healthy and the mother of several grown-up children. I must not conceal the fact that for a long time the patient caused me a good deal of anxiety on account of the absence of definite points on which to base a diagnosis.

The second case was a lady in the fifties, living outside of Berlin; unfortunately I had the opportunity of seeing her only once. In the early part of 1888 she experienced profound emotional disturbances; since the following summer she had suffered from mild gastric troubles which lasted, with variable intensity, till November. After that every meal was regularly followed by vomiting, which had continued with few intermissions till the beginning of January, when I saw the patient. The woman who had formerly been strong, was now very much run down; she had frequent attacks of unconsciousness, and complained of great weakness, especially in the legs. Sleep was good. The urine had been repeatedly examined, but albumen and sugar were not found.

I found a bedridden patient who was quite well nourished in spite of the emaciation she complained of; she could move quite readily in the bed; she spoke with deliberation; in short she seemed less affected than was to be expected from her history. On examination I could find

nothing but a struma, and tachycardia up to one hundred and twenty beats per minute. There was no tumor nor any tenderness in the abdomen. Patellar reflexes normal; pupils reacted well; no limitation of the field of vision, and no complaints about sight. Sensation everywhere normal. Heart and lungs negative.

In my presence the patient ate two pieces of toast and drank a glass of water without vomiting. The tube was easily introduced and the stomach-contents expressed twenty-five minutes after. No hydrocholoric acid found; the fragments of toast were scarcely at all digested. This result left the diagnosis in doubt between a severe neurosis and an occult carcinoma; yet the absence of true cancerous cachexia favored the former. The rapidity of the pulse was attributed to the struma; tabes accompanied by gastric crises was excluded on account of the absence of its specific symptoms.

The condition seemed to improve at first by using nutritive enemata and restricting feeding by the mouth as much as possible; small doses of digitalis and atropine were also given. But she soon relapsed into the old condition; she gradually grew weaker, till one day she was seized with epileptic convulsions and died several days later. An autopsy was not allowed, yet the whole clinical picture led me to diagnosticate an affection of the medulla oblongata, probably a tumor, involving the roots of the vagus, thus causing the persistent vomiting and the rapid pulse. At all events, this presupposes such a situation of the suspected tumor that the nucleus of the fibers of the vagus distributed to the heart was paralyzed or destroyed, while those fibers going to the stomach were kept in a condition of chronic irritation. The soundness of this supposition remains in doubt, although it is by no means without a parallel (Rosenthal).

Both of these cases are typical examples of severe vomiting caused by nervous irritation, and at the same time they show how difficult (sometimes even impossible) it is to make a diagnosis at a given time during life.

For a certain group of cases we are unable to find this proof, although we may suspect the reflex origin. Pre-eminent among these stands the vomiting of neurasthenic and hysterical patients; it is uncommon among the former, but occurs frequently in the latter. It is characteristic of this form of vomiting that it usually occurs without any true nausea, and that the retching is reduced to a miuimum. Hysterical vomiting may occur after every meal; sometimes it is less frequent. Either all food may be rejected or only certain kinds, or even individual dishes. I made use of this fact in making my first investigations on the course of normal digestion in human beings; my subject was a hysterical girl who could retain all kinds of solid food, but was compelled to vomit whenever she swallowed any fluid. Another young girl, who has now been over five years at the *Siechenanstalt*, regularly vomits nearly all that she has eaten almost immediately after every meal. The general nutrition suffers surprisingly little from this persistent vomiting; thus the second patient's weight has been almost the same during the past

four years; she has come down from 40.5 to 39.5 kilogrammes (89 to 87 pounds). In other cases the vomiting does seem to affect the weight. Thus Tuckwell reports that three children were very greatly emaciated after prolonged vomiting which lasted for months; it was controlled by sitting the little patients up as soon as any tendency to vomiting occurred (and also, to be sure, regulating the diet). Barras speaks of a woman who suffered from nervous vomiting, but who ceased to vomit while she was in the bath; she was cured after her meals were given to her in this way.

This affection may pursue an acute or chronic course; it may begin spontaneously or may follow some demonstrable cause. One young girl was attacked immediately after the death of her father; another as the result of breaking off an engagement of marriage. As in other neuroses, the female sex is especially liable.

I must confess that my experience of the infrequent occurrence of vomiting in neurasthenics does not agree with that of Rosenthal, who claims to have seen it not infrequently in this class of patients. I shall simply content myself with giving the headings of two of his histories:

Observation No. 31.—Neurasthenia, hyperæsthesia towards acids with consecutive gastric colic and vomiting. Cured by local remedies (small pieces of ice, with two or three drops of tincture of nux vomica) and general invigorating treatment.

Observation No. 32.—Neurasthenia following onanism, with frequent vomiting. After the latter had ceased it began again after each coitus, while a heavy meal did not cause any complaint. Neurasthenia and vomiting cured by prohibiting sexual intercourse at the beginning of the treatment, increasing doses of potassium bromide, with some pyrophosph, ferri citronatric [Ph. Austr.] Neptune's girdle, galvanization of the sympathetic, and hydriatic procedures.

This difference in observation may appear striking; yet it may be readily explained by the fact that two observers in places at some distance from each other (Berlin and Vienna) deal with different kinds of patients. Concerning the multiplicity and intensity of all neuroses it is peculiar that they most frequently attack the easily excitable Southerners, and especially the nationalities living near the military border. Hypersecretion seems also to occur more frequently there than in Germany.

Finally, I must speak of a form of nervous vomiting which was described by Leyden. It may occur as a primary neurosis, or as a secondary spinal affection, or as a reflex form. A peculiarity of this variety is the periodicity of the attacks (whence the name periodical vomiting), which may last from a few hours to a number (ten) of days. They begin with sudden nausea and colicks contractions of the intestines, but the abdominal wall is relaxed. At first the vomit consists of food *debris* and slimy masses, later of bile and streaks of blood; the attacks accompanied by migraine and tearing sensations in the limbs; they are followed by obstinate constipation, which is due to a spasm of the intestine. The trouble may last for years, but its origin can only be sought in the direction indicated above. In two of my cases the autopsies gave negative results.

LOCOMOTOR ATAXIA.

SYMPTOMS.—Among the disturbances of sensibility in locomotor ataxia, hyperæsthesia of the trunk seems to appear regularly and usually early. This consists for a long time only in an oversensitiveness to slight touches while in opposition thereto there is usually observed in the beginning on the legs a diminution of the pain and posture senses. This latter appears to precede somewhat in development the trunk hyperæsthesia, which in the beginning corresponds usually to the area of distribution of the middle thoracic nerves. Its subsequent development ensues symmetrically in horizontally-encircling zones above and below, and spreads out over the arms in a characteristic manner. There occurs implication of the area of distribution of the lumbar and sacral nerves, in which, between hyperæsthetic, there are found normal zones. These may also be demonstrated for a long time in the lower thoracic area. The distribution of the tactile anæsthesia is characteristic; it corresponds not to the area of distribution of the peripheral nerves, but to that of the spinal roots or their intramedullary fibres, in which respect it simulates disturbances of sensibility following lesions of the spinal cord and the posterior roots. There may also occur various sorts of other anæsthesias in consequence of peripheral nerve-disease. On the periphery of hyperæsthetic and between hyperæsthetic zones there occurs usually a marked hyperalgesia, especially for cold. The reflex irritability of the skin is here very much diminished or totally abolished. Symptoms of sensory irritation are a very frequent, though not constant, accompaniment of the anæsthesia. A marked ulnar-pressure analgesia with other disturbances of sensation in the ulnar region appears to be the rule in tabes dorsalis. Lahr (Archiv für Psych., vol. xxvii, Pt. 3).

PHYSICIANS HAVING CONSUMPTIVE PATIENTS (even in a considerably advanced stage) may be glad to learn that Dr. Edward Playter has rooms for two or three more at Hawthorne Springs, Thornhill, where he has every essential convenience and appliance as for ozonized oxygen, rain baths, lung gymnastics, etc., when indicated. The site is elevated,—higher and dryer than further north, beyond the "Ridges," among the lakes. Patients are under my constant supervision. Electric cars run to the Springs about every hour from Toronto: return fare. 25c. Terms moderate: made known, on application, with particulars of condition of patients, requirements, etc. Address,

EDWARD PLAYTER, M.D.,
Toronto.

NOTICES.

The next annual meeting of the Ontario Medical Association will be held in Toronto on the 13th and 14th of June, and promises to be one of the most interesting meetings ever held of the Association. Dr. Vincent Bowditcti, of Boston, will open the discussion on "The Sanitarium Treatment of Tuberculosis." Dr. Wilson, of Philadelphia, will present a paper on "Perforation in Typhoid Fever," and it is also expected that Dr. Fenger, of Chicago, will open the discussion on surgery. It is desirable and absolutely necessary that the members throughout the Province that intend reading papers should forward the title of the same to the secretary, Dr. Parsons, 97 Bloor Street West, as soon as possible. We feel positive it would be to the advantage of the rural practitioners to become members of the Association, if not one already. You will find it interesting and instructive and makes a nice holiday in a season, that, as a rule, is not a busy one. The profession in Toronto always make it a point to secure you a pleasant time and this year special efforts will be made in that direction. Many remember the pleasant visit to Windsor two years ago. We hope to have a repetition here, and a hearty welcome will be given to all visitors. Come and bring your overworked confreré that needs recreation.

On August 30th, 31st and September 1st, 1899, the next annual meeting of the Canadian Medical Association will be held in Toronto, under the presidency of Mr. Irving H. Cameron.

It is now some ten years since this Association met in Toronto and every effort will be put forward to make this the most successful meeting ever held. One of the most interesting features of the meeting will be the probable arrangement is the final details of a scheme whereby Dominion Legislation will become, in the near future, an accomplished fact. This together with an ever growing interest in the value of the association as a promoter of scientific research, will add materially to the success of the Toronto gathering.

ADJUSTABLE FIBRE SPLINTS.

The originator of DePuy's Adjustable Fibre Splints has for a number of years realized the necessity for a splint that, while it must be firm, adjustable, light and cleanly, should be composed of such materials that it could be placed on the market at a price less than half that charged for any of the many kinds from which the physician has to choose. He is more than pleased to state that he is now in a position to offer a splint that perfectly fills every one of the above requisites.

The splint is a fibre that has been saturated in a compound that renders it firm and non-pliable at ordinary temperature.

In the event of them having to change their shape in adjusting, the best results will be obtained by immersing in hot water for a few moments

or holding over a hot stove, turning from side to side until evenly heated, when they become perfectly plyable, conforming both longitudinally and laterally to any fracture, and when cold regaining their former rigidity.

Unlike many kinds of manufactured splints and splint material they are not sufficiently porous to absorb septic matter, and by washing in hot water they can be made aseptic, and used several times if care is taken to preserve them.

Having a rough exterior, they will never slip under a bandage, and this is a feature highly recommended by physicians who have used splints with a smooth outer surface and experienced difficulty in keeping them in place.

They are impervious to moisture and unaffected by ordinary temperature of the body or excessive perspiration. When used with a suppurating wound, a portion of the splint can be cut away to allow free drainage, and the piece replaced at a slight cost,

To physicians who use the x-ray in fracture cases, the "DePuy" is invaluable, as it offers no resistance.

The price alone of the DePuy Splints, when considering their many points of superiority and the satisfactory results obtained by their use, is so low that the physician cannot afford to lay out money needlessly in higher priced and inferior splints.

On the following pages we present a few cuts, showing the forms held in highest esteem by the physician, and a few of the many testimonial letters we are constantly receiving unsolicited.

CHAS. L. SPALDING,
Sole Agent for Canada,
13 Aberdeen Chambers,
Toronto.

A CASE OF CHRONIC SALPINGITIS—CONDEMNED OVARY SAVED.

Mrs. McC——, Stamford, Conn.; American; age 32; admitted April 11, 1898: Salpingitis of left ovary. Had been under the care of a leading physician who advised her to have the ovary removed. This was absolutely refused, and I was called in consultation. I did not agree with my colleague that the removal was absolutely necessary. This pleased the patient so much, that she decided to enter the hospital for treatment. Digital examination revealed a soggy mass posteriorly on the left side, the womb considerably retroverted, and severe endometritis. My theory was that absorption had taken place through the tube, and that if the endometritis were thoroughly cured, the ovarian condition would subside; there being no positive evidence as yet of any pus. I therefore decided to put the patient on the following course of treatment: a teaspoonful of bovinine in old port wine, every two hours, with a hot vaginal douche of plain sterilized water. This treatment was continued to the 27th, when the pain, which had been previously very severe, was entirely relieved. On the 28th, after etherizing the patient, I thoroughly

curetted the womb, and after depuration with the bovinine-peroxide reaction, packed it with bi-sterilized gauze satuated with iodoform-bovinine. This was removed in forty-eight hours, the womb was again bovinine-peroxidized, and repacked with gauze satuated with bovinine pure. These depurations and packings were repeated until May 5th, when they where discontinued, and bovinine tampons were applied twice a day. The bovinine by mouth was increased to a wineglassful in grape juice every four hours. Patient now felt, as she expressed it, well and happy, aside from the weakness resulting from former sufferings. The bovinine tampons continued to be applied until the 20th, when the womb was found in a normal condition, there was no tenderness over the ovary, and the patient's general condition was better than it had been for years. A Thiersch douche was now employed at bedtime, up to the 28th. May 29, 1896, she was discharged cured, and delighted that her ovary had been saved.

Bicycling for Children.—The time is fast approaching when once again the hum of the wheel will be heard in the land, and therefore a few remarks on the benefits and drawbacks of this particular form of exercise for children will be seasonable. Bicycling for anyone who is sound in wind and limb, when not carried to excess, is beneficial, and the same may be said concerning wheeling for children above a certain age. But the practice which unfortunately came into vogue last year, of allowing and encouraging infants to ride, is a most reprehensible one and calculated to do infinite harm. The *London Field* has this to say on the matter: "A most pernicious practice has sprung up of encouraging very young children to ride the bicycle, and certain people have appeared to vie with each other as to which should produce the youngest rider. To such an extreme has this senseless competition been carried that in the United States a baby of 18 months was taught by his father to steer and propel a diminutive bicycle. The child has now been riding for over a year, and has done as much as four miles at a stretch. Its case came under the notice of Dr. Elliott, who made a communication on the subject to the New York Academy of Medicine. The child was just over 3 feet high, weighed 31 pounds, and rode a machine weighing 11 pounds geared to 46 inches and driven by a 4-inch cranks. In making some critical remarks on the case, Dr. Elliott said that he considered that at an early age the bones were soft and the ligaments undeveloped and unfitted to stand the special requirements of riding a bicycle, and the result might be as in this instance, a reduced ligamentous system. He also gave it as his opinion that bicycle riding tended to disproportionate the legs when compared with the arms." An instance like the foregoing is nothing less than pitiful, and seems almost a case for legal interference. Another form of riding to which a stop should be put is that of small boys and girls riding bicycles in the crowded streets of a city. The practice is not only dangerous to themselves but to other people.

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THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS WITH TREATMENT.

BY DR. GILBERT GORDON.

Mr. President and Gentlemen of the Toronto Medical Society :

I offer no apology to you for calling your attention this evening to this, one of the most living subjects of to-day in the domain of medicine. The great importance of the early diagnosis of this world's plague has been forcibly impressed upon me during the past two or three years in the Toronto General Hospital in connection with the work that has fallen to my lot there.

The fatality of this disease appalls us. The victims claimed by it are greater in number than by all other infectious diseases put together. We see it everywhere. We have become accustomed to the sight of its fearful ravages. Until lately, when brought face to face with it, we, hopeless of victory, have retired from the field, satisfied if we have been enabled to make some ignominious compromise with our dreaded foe. This dread upon us, have we not often wasted valuable time, and by carelessness or ignorance allowed this hated enemy of mankind to strengthen unnecessarily his position. Let me quote from Dr. Pryor, of Buffalo, in the *Medical News* of February last, he, speaking of the State of New York, says, "About 14,000 die from consumption in this state each year. About eleven per cent. of all deaths are due to this one disease, and approximately one of every five more than twenty-one years of age suffers from it. There are more than 50,000 consumptives in this state. Of the 5,000,000 now living in New York State about 600,000 will probably die of consumption." In our own country the proportion is about the same. In 1898, for eighty per cent. of the population, as far as made up, the deaths were as follows :

Scarlet Fever	174		
Diphtheria	387		
Measles	84		
Whooping Cough	102		
Typhoid	579		
Total	1,326	*Consumption*	*1,791*

Changes come so gradually that we often have to stop and think in order that we may realize where we are.

Not many years ago we were forced to acknowledge with sorrow, often with shame, that we could do nothing for our consumptive patients but help them to die easily; now, with delight and with pride, we can say that this disease can be cured in a large percentage of cases. The credit of cure is due to the man who makes the diagnosis early. The blame is often on the man who fails to discover the disease until cavity formation has begun.

There are many difficulties in the way of early diagnosis. Especially is this so when the trouble is preceded by such diseases as bronchitis, emphysema or pleurisy. But even here, a careful physical examination, together with the aid we receive from the microscope in the discovery of the tubercle bacillus or the elastic fibres, will enable us to make a diagnosis. The fight with this disease has been long and grievous. Let us look at some of the work done by our predecessors.

In the *Edinburgh Medical Journal*, January, 1856, John Hughes Bennet writes: "Extensive examination of sputa with the microscope has up to recent periods served to persuade most scientific physicians that it was of little scientific importance, inasmuch as percussion and auscultation yield us more efficient and exact means of determining the changes which go on in the lung. The recent examination of sputa by Dr. Andrew Clark may induce them to modify that opinion." Prof. Van der Kolk, of Utrecht, the first to direct attention to the presence of these elastic fibres, claimed that they existed at *exactly the commencement* of phthisis. Dr. Bennet says again, while considering a case: "The facts of this case serve in my opinion to establish that there are instances in which the occurrence of disintegrated lung tissue may be detected by the microscope in the sputum before any auscultatory signs are audible."

In the *British Medical Journal* in 1860, Dr. Andrew Clark writes: "The elastic trabeculæ are present in the sputa during the elimination of the tubercle and constitute the diagnostic work of the elimination stage. . . . The physician can confidently declare that phthisis exists when he finds the elastic tuberculæ in the sputa."

In the *American Journal of Medical Science*, October, 1858, Dr. Scott Alison, considering 2,000 cases in Brompton Hospital, writes: "Numbers have returned to their employment, muscle and fat have increased, cough removed; result due to early diagnosis, not to any particular treatment. . . . Early diagnosis would be secured by a complete inquiry into all symptoms, by complete physical examination instituted at once, chest freely exposed back and front."

Truly much is due to the valuable work done by great men in those early days.

Although Villemin, in his article on "Tuberculosis," published in 1868, declared his opinion that it was due to a disease germ, and that it was of an infective nature, it was not till 1883 that the great Koch was able to demonstrate a specific bacillus in tubercular lesions. Now the perfection and ease with which this bacillus is stained gives us a perfect means for early diagnosis in most cases.

"The term "early stage case" must, of course, be more or less relative. Before Koch, an early stage case to many was any stage before the patient showed any signs of failing in general appearance. Now by careful observation of physical signs and the aid of the microscope the diagnosis may be made before the patient is aware that he is falling off.

In the *New York Medical Journal* of Feb. 12th, 1898, Dr. D. C. Auber, of Ashville, N.C., writes:

"While we still rely on the microscope to confirm our diagnosis absolutely we are beginning to recognize that there is a possibility of making a diagnosis before expectoration begins." He adds:

"The profession to-day have almost without exception recognized that the disease is curable, the prognosis depending in great part on the diagnosis being made early." He adds also that few cases sent there are "early cases." He describes a "pre-tubercular" stage, this stage found generally among friends accompanying patients to health resorts or those coming in contact with those infected. He declares "that all in this stage do well regardless of treatment provided certain hygienic laws are observed."

Although symptoms may not be of much use in the diagnosis of pulmonary tuberculosis in its earliest stage, yet they are valuable as a means of guiding and confirming.

An inherited tendency should make the physician more careful in examining and lead him to make more frequent examinations.

PAIN may often be complained of before any sign is noticed.

A slight rise in temperature, especially in the afternoon, may exist early and is often most important.

A cough without expectoration should prompt a careful physical examination, as also should general failure of strength, loss of weight or appetite. The physical examination should be made with chest and back both exposed, and in some regular order thus:

INSPECTION may exhibit that contour of the chest predisposing to the disease such as nervousness, acute epigastric angle, oblique ribs, prominent clavicles, winged scapulae, also a diminution in expansion at a particular spot.

PALPATION shows increased vocal fremitus. Here it is well to remember that on the right side the fremitus is slightly increased normally.

PERCUSSION does not give us much information in the very early stage.

AUSCULTATION.—Here the signs are very valuable such as inspiratory sound on quiet breathing scarcely audible. This is generally accompanied by a slightly prolonged expiratory sound. A harsh inspiratory sound is often one of the first indications of disease. We may not have all the characteristics of bronchial breathing at the beginning.

BRONCOPONY we may count as one of the early signs in most cases. A careful comparison of one side with the corresponding region on the opposite should always be made.

The difficulty of early diagnosis is greatly increased by the many and diverse ways in which the disease begins. We see the insipient form where the disease is well advanced before the patient complains. The disease may be ushered in by gastric symptoms, or symptoms of malaria.

A pleurisy or bronchitis or a laryngitis may be the beginning of the trouble. In these cases even a careful physical examination of the lung and sputa will assist us in making an immediate diagnosis.

Haemoptosys, while it at times, is the first indication of a serious lung affection, in most cases, must, I think, be preceded by a condition which would have yielded physical signs pointing to the disease had examination been made.

Another means which in the future may be of great use in early diagnosis is the use of the X Ray.

In the New York *Medical Journal* of February the 18th of this year, Dr. J. Rudis-Jicinsky gives the results carefully tabulated of twenty cases diagnosed by the ordinary methods, and by the X Ray and adds:

"It is of interest from a practical point of view to note that the application of the X Ray in nearly all our cases yielded good results. This number of experiences and experiments, with many selected from direct practise, go to show that the X Rays were accurate and very useful for comparative diagnosis equally applicable in all stages of tuberculosis."

He quotes also in the same paper, Dr. J. Edward Stubert, physician in charge of the Loomis Sanitarium for Consumptives, thus:

"They were used not only as factors corroborative of results arrived at by consultation and percussion, but in some instances for discovering isolated foci of infection not recognizable by ordinary methods."

The use of tuberculin as a means of diagnosis is by general consensus of opinion ruled out as too dangerous a means simply for diagnostic purposes.

The treatment of pulmonary tuberculosis in this day seems to have resolved itself into one only, viz., Fresh air administered in the most favorable hygienic surroundings. However, I must say that in my own experience in private as well as hospital practice the results obtained by the use of creosote have been most gratifying, if not in curing certainly in arresting the disease, and in relieving symptoms.

In considering the open air treatment for our patients we will have to settle these questions.

FIRST: Can this treatment be carried out more effectively in a sanitarium or out of one? So far the sanitarium seems to furnish the most satisfactory results.

In connection with this subject Herman Weber, consulting physician to the Royal Hospital for Consumptives at Ventnor, in an article to the *Practitioner* last year says:

"This treatment can scarcely be done satisfactorily in a great many cases excepting in a well arranged sanitarium with resident medical men." He says also: some years ago I collected public and private results as far

as I could and found amongst sanitarium patients 13-14 % of perfect recovery, 15-17 % nearly perfect recovery, 26-28 % great improvement, while about 22 % remained stationary. The remainder 22-23 % had become worse. He also says:

There ought to be Sanatoria for the wealthier classes, for those without means of their own, and for those with slight means. "Of much greater importance, however, than the Sanatoria for the rich are those for the poor."

The results published in the *Lancet*, p. ——, British Medical from 1897-98, on Sanatoria treatment are most satisfactory.

It is early to report statistics of systematic treatment of patients by the open air method in private. In suitable cases, however, I see no reason why, in this climate, this could not be carried on perfectly satisfactorily at home, for at least seven months of the year.

The second question we will have to settle is the location of the district where our patients will receive the most good. With regard to this point, Theodore Williams, consulting physician to the Brompton Hospital, in the *Practitioner* for June of last year, writes: My experience of over 350 cases treated at high altitude Sanatoria has enabled me to come to some decided conclusions as to what influence this climate exercises on pulmonary tuberculosis in general, and as to the special forms most benefited. The general effect on selected cases of chronic tuberculosis of the lung is excellent. Improvement takes place in 80% or in $\frac{7}{8}$ of the patients. Great improvement in 70% and cure of thedisease *i.e.* disappearance of all symptoms in 41%, 2% remaining stationary and 14½% becoming worse.

The following figures, giving results of treatment in different localities, I select from the same journal:

	Arrest.	Stationary including arrest.	Stationary.	Worse.
High altitudes	45.2	75.5	5.3	19.1
Sea voyages	7.7	53.3	10.7	33.8
Riviera	5.9	36 6	17.8	45.6
Home climates	2.	38.9	20.	41.1

In the same number of the *Practitioner* Arthur Ransome, consulting physician to the Manchester Hospital for consumptives, after considering certain facts as to the prevalence of tuberculosis in different districts, writes: "Such facts as these might well lead us to the conclusion that mere locality and climate are absolutely of no importance either in the prevention or the cure of tubercular disease, but I am inclined to believe that we should be wrong in so deciding, at any rate so far as locality is concerned."

One other point well worth considering by the medical profession is this: Should pulmonary tuberculosis be placed among the list of reported diseases? I think most of us will agree that such reporting would be of untold value in the prevention of the disease. No one would advise isolation especially compulsory isolation, but the advantage our Health Officers, would have if they were able to locate infected cases would be very great. For then printed circulars of information could be distributed to patients and friends, giving directions as to disinfection, etc. Furnishing of

sputa cups by the state and means for collecting by the state, sputa for examination, could be made use of. Of course in early cases patients still in employment would suffer hardships—but why should so many be exposed to danger by infection from this awful disease any more than from other infectious diseases. There is less reason, it seems to me, for exposure in this disease than in many others, for so much can be done to prevent its spread.

In the *Lancet* of February the 4th, 1899, Arthur Newsholme, medical officer of health for Brighton, writes:—

Similarly the healthy members of a phthisically invaded household may be able to withstand infection if precautionary measures are begun as soon as the nature of the disease is detected, and are continued thereafter, but they finally fall victims to the repeated doses of infection if a fatalistic inertia is allowed to prevail and no efficient precautions are taken. The following circular is the one used in Brighton for distribution among those infected:—

PRECAUTIONS FOR CONSUMPTIVE PERSONS.—Consumption is to a limited extent a contagious disease. It is spread chiefly by inhaling the expectoration of patients which has been allowed to become dry and float about the room as dust.

Do not spit, except into receptables, the contents of which can be destroyed before they become dry.

If this simple precaution is taken there is practically no danger from infection.

The breath of consumptive persons is free from infection.

The following detailed rules will be found useful, both to the consumptive and to his friends:—

1. Expectoration, indoors, should be received into small paper bags and afterwards burnt.

2. Expectoration, out of doors, should be received into a suitable bottle, to be afterwards washed out with boiling water, or into a small paper handkerchief, which is afterwards burnt.

3. If ordinary handkerchiefs are ever used for expectoration, they should be put into boiling water before they have time to become dry, or into some disinfectant solution to be ordered by the doctor.

4. Wet cleansing of rooms, particularly of bedrooms occupied by sick persons, should be substituted for "dusting."

5 Sunlight and fresh air are the greatest enemies of infection. Every consumptive should sleep with his bedroom window open, top and bottom, and during the day should occupy a well ventilated room. Re-breathed air is the main cause favouring consumption. If the patient is warmly clad he need not fear keeping out of doors in any weather. N.B. The patient himself is the greatest gainer by the above precautions, as his recovery is retarded and frequently prevented by renewed infection derived from his own expectoration.

6. Persons in good health have no reason to fear the infection of consumption. Over fatigue, intemperance, bad air and dusty occupations, favor consumption.

VAGINAL COELIOTOMY. WITH REPORT OF CASES.*

BY A. LAPTHORN SMITH, B.A., M.D., M.R.C.S., ENGLAND.

Fellow on American and British Gynecological Societies, Professor of Clinical Gynaecology in Bishop's University, Montreal, Surgeon in Chief of the Samaritan Free Hospital for Women, Gynecologist to the Montreal Dispensary, Surgeon the Western Hospital.

Although the author's experience has been limited to ten cases, yet these have been such instructive ones that he has been enabled to arrive at the following definite conclusions as the relative merits of and indications for vaginal coeliotomy.

1. Vaginal coeliotomy is indicated in retroversion with fixation, in minor diseases of the ovaries and tubes and in small fibroid tumors of the uterus. But in the author's experience the vaginal method of freeing the retroverted adherent uterus is, on the average, more difficult than the abdominal method; and vaginal fixation is not so reliable in curing the retroversion and prolapses as is ventrofixation.

2. If the uterus be movable and there are no adhesions to be broken up, one is not justified in opening the peritoneal cavity either by the abdomen or the vagina in order to shorten the round ligaments. In such cases Alexander's operation is easy, quick, safe and more reliable. The author has had no failures in his last hundred cases.

3. For the removal of pus tubes the operation by the vagina is more difficult than by the abdomen in all cases excepting those in which the uterus is removed at the same time When the uterus is split in halves, and each half is removed with its corresponding ovary and tube, and when clamps are used, the vaginal operation is easier than the abdominal in which ligatures are employed The vaginal operation is a little safer on account of the drainage which it affords, but on the other hand it offers more risk of injuring the ureter. The author is opposed to the removal of the uterus even when both ovaries and tubes are removed, owing to the bad moral and physical results; and he is opposed to the use of clamps as compared with ligatures, because, although easier and quicker, the clamps prolong the convalescence, owing to the bruising of the nerve in the broad ligaments.

4. For the removal of chronically inflamed ovaries and tubes vaginal coeliotomy has the following decided advantages: *(a)* It is less dangerous because the intestines are not exposed to the air or to bruising by the hands, or infection through diseased tissues passing over them so much as when the latter are removed by the abdomen; *(b)* vaginal coeliotomy is less painful, the incision in the vagina causing almost no pain, while the abdominal incision and stitching are exceedingly painful; in vaginal coeliotomy morphine is rarely required, in abdominal coeliotomy it is cruel to deprive the patient of it, although we know that her chances of recovery are lessened and her convalescence is prolonged by its use; *(c)* there is no tell-tale scar after vaginal coeliotomy which is sometimes a matter of great moment to young single women who intend to marry.

* Read before the American Gynecological Society, Philadelphia, 23 May, 1899.

the presence of the scar has to be explained and the patient is suspected of having been unfitted for marriage by the removal of both ovaries, when in reality one or both ovaries remain; *(d)* the danger of hernia, although the author has had no case of hernia during the last three years owing to his method of suturing and leaving in the silk worm gut either permanently or at least a month, and he considers this accident entirely preventable, yet for those who meet with it its possibility should have great weight in balancing the merits of the two operations. There is no hernia after vaginal coeliotomy.

5. Much good conservative work on the ovaries and tubes, and even on the uterus can be performed by vaginal coeliotomy with almost no risk or pain to the patient. The uterus and appendages can be brought out at the vulva through an opening in the anterior vaginal wall and cysts can be excised or burned out; one-half of one ovary can be amputated and the remaining bivalvular flaps neatly brought together with fine silk or cat-gut; the closed tubes can be opened or a piece of the pavilion removed and a probe passed into the uterus and the mucous and peritoneal layers of the remainder of the tube brought together with interrupted cat-gut sutures, and small fibroids not larger than the normal uterus itself can be cut out and the hole in the wall of the uterus closed with two or three rows of fine sutures. But it is very dangerous to open at closed tubes as long as there is any active inflammation or infection going on, because by doing so we break down the wall of defence made by nature around the infected tubes to save the general peritoneal cavity from invasion.

6. Tubal pregnancy before rupture and not later than the sixth or eighth week can be readily removed by vaginal coeliotomy; the author had one successful case compared with twelve successful cases by the abdomen. But vaginal coeliotomy is contra indicated when the pregnancy has advanced to twelve weeks or has returned into the abdomen. In several of the author's cases the abdomen was full of clots as high up as the liver, and the foetus was floating among the bowels higher than the umbilicus. These cases could not have been successfully operated by the vagina.

7. In general terms all cases in which the trouble is small in size and located low down can and should be operated by vaginal coeliotomy, while everything large and located high up should be reserved for abdominal section.

250 Bishop street, Montreal.

SHOCK.

BY ROBERT H. M. DAWBARN, M.D., OF NEW YORK.

Professor of Surgery in the New York Polyclinic Medical School and Hospital; Visiting Surgeon to the New York City Hospital.

If we study, the world over the causes of fatality following major operations, we find either sepsis or shock at the head of the list. Of recent years there has progressively been a lowering of the mortality due to infection of wounds; but is this true of the proportion of deaths from shock? It has seemed to me that for many years little advance has been made in our method of handling shock. No surgical topic more deserves our research; none receives it so little. An infinite number of minor topics takes up the time of our investigators; but this, the great lion in the road to recovery, is avoided to a degree that is surprising. How can one help feeling astonished at such neglect who observes that even the most recent surgical text-books almost ignore it? For example, in New York State, two prominent works, recently issued, of 1240 and 1600 pages each, respectively, devote the one, four, and the other, three pages to the entire topic of shock! The same is true of the largest and most recent London work on surgery, of 2272 pages, which devotes four of them to the greatest cause of surgical deaths (next to infection)—not much more space than is devoted to bunion!

Space precludes a discussion of the pathology of shock, and yet a few sentences are necessary in order to make clear the views upon which at least in part the treatment is based. Doubtless the last word has not yet been written on this topic. Nevertheless, the experiments of Professor Golz of Strassburg have never been successfully contravened. They are well known to all surgeons.

We may divide our cases of shock into, *first*, those in which the cause, whether a physical or a mental blow at the nervous system, partially abrogates the functions of the sympathetic nervous centers; *second*, where the cause partially abrogates the functions of the cerebro-spinal nervous centers, as well as of the sympathetic.

In the first group the brain does not succumb to the blow. It is still capable of performing its functions fairly well. The sympathetic nerves, however, no longer properly invigorate the cardiac ganglia, and the tone of all the blood-vessels is also lost. Because of the weak heart-action the blood tends to accumulate in the veins. The patient bleeds inwardly, that is, into his own veins. The blood, like any fluid, must move in the direction of least pressure, and so it accumulates in the relaxed, dilated veins, leaving the arteries partially emptied. The condition in its resultant symptoms is identical with internal hemorrhage. I know of no surgeon capable of making a diagnosis between this not very uncommon type of shock and inward bleeding. It is interesting to note that Professor Hare has recently shown that death from chloroform narcosis is really death from shock; his words are: "The man is suddenly bled into his own veins and capillaries as effectively as if into a bowl."

We should note that in this, sometimes called the *erethistic* type of shock (to distinguish it from the commoner *torpid* or *apathetic* type), the victim is usually perfectly conscious until nearly the moment of death; occasionally toward the end, is a little delirious or even convulsive. from cerebral anemia. He is restless, tossing about; he is thirsty, and yet often nauseated; he sighs for more air; his skin is cold, pale and wet; his pulse is rapid and feeble. Are not these, each and all, the signs of inward bleeding? But they are just as truly the signs of the erethistic type of shock. I am personally cognizant of two instances in which a famous gynecologist—a man of great surgical experience—treated a patient *post-operationen* for shock, but the autopsy showed the abdomen to be full of blood, due to a slipped ligature of the stump.

In the one case (shock) the bleeding is *into* the paralyzed and dilated vessels; in the other (hemorrhage) *out* of the vessels. But the symptoms are one and the same, and are due mainly to lack of blood in the brain and heart.

In the second and commoner type of shock—the *torpid* or *apathetic*—not only the sympathetic system, but also the cerebro spinal centers, have felt and partly succumbed to the blow. The patient is, in the milder cases, mentally benumbed; in the worst ones, quite unconscious. Because of this benumbing of the higher centres, the signs of this, the commonest type of shock, necessarily differ very much from those of the first type described. He does not suffer, as would an active brain, from dyspnea, nor is he restless, nor does he complain of nausea nor of thirst. He has however, the cold, pale, sweating skin, the rapid, feeble pulse, the shrunken features, of inward bleeding. Often he has lost control of his sphincters. Sometimes he is a little delirious or convulsive—more commonly, simply in stupor. His symptoms are precisely those of hemorrhage, except as just stated; and the reason for the difference is obvious.

The only condition (save inward hemorrhage and occasionally a form of extreme sepsis) which can be confused with shock is fat embolism, and the differential diagnosis is not difficult It is a special danger of fractures, and lacerations of, or operations upon, fatty tissues. At first, the lungs suffer most from the infarction; later if the patient survives and the fat is forced on through the pulmonary capillaries, the kidneys and other organs may also undergo fatty embolism. Five points aid in clearing up the diagnosis: (1) The time at which fat embolism develops. This, as compared with shock, is usually late, from two to three days after the injury. (2) The cyanosis, due to plugging of the vessels of the lungs. (3) The extreme dyspnea, with very rapid breathing and sometimes bloody foam or even hemoptysis. (4) The mental excitement which often ushers in the symptoms. (5) The presence of fat in the urine.

CAUSES OF SHOCK:—These are properly divided into I. *predisposing, and* II. *exciting.*

I. Under the first head, fear is a considerable factor. I know personally of one fatal case in which the subject, shown by an autopsy most.

carefully made to have no apparent lesion or disease of any organ, died apparently of sheer cowardice, some hours before the time set for operating upon piles. His agitation and fright rapidly increased, and he suddenly collapsed, dying within an hour, and with symptoms of shock. All measures tending to reassure patients and to calm them are of utmost value in preventing shock. This is one reason why the writer always prescribes whisky and a little morphine with atropin an hour before operation. The patient, otherwise more or less frightened, takes his anesthetic in a calmer, an almost cheerful, frame of mind. Also, as these drugs are analgesics, less ether or chloroform is needed than otherwise, and hence there is less danger from it.

We should not forget, as one peril from *major* operations under *minor* anesthesia, that a conscious patient must be nervously affected in an unfavourable way by hearing the saw grating through his bone, or by seeing the bloody paraphernalia used, etc. All this tends to invite shock. To illustrate, an aspiring needle may safely be introduced in several directions into the brain of a patient who is under general anesthesia; whereas, the same needle would probably cause prompt death from shock if driven into the brain of the same patient while conscious. Furthermore, a conscious patient whose thoughts are diverted elsewhere, at the time of being cut, is apt to feel much less shock than one who is nerved to the suffering he is expecting. It is easier to snap a tense thread than one relaxed. All military surgeons have noted that a soldier severely wounded in battle may not realize it at all, for some time thereafter, and will suffer less from shock than if he were to lie down on the table in a state of expectancy, and while conscious receive an equally grave physical injury.

From the above points it follows that although one may, for example, amputate a thigh painlessly under cocain or other minor anesthesia, it may very possibly result in a greater degree of shock than would have followed general anesthesia.

Under the heading we are discussiug comes also impairment of vital energy by uremic or lithemic or diabetic troubles, or other constitutional dyscrasias; by opium or certain other habits; by prolonged sleeplessness; by business worries or other anxieties; by recent illness; or by either infancy or extreme old age. Sometimes, too, there is a family inheritance whereby the slightest operation proves perilous; whereas, on the other hand, we occasionally find a man whom the most scientific surgeon can hardly kill—such is his vital resistance to shock.

II. Exciting Causes of Shock.—These may come in the form of either mental or physical blows. We are now discussing the latter, mainly; and regarding operations, there are four of chief importance. These are: (1) loss of blood; (2) length of operation; (3) excessive major anesthesia; (4) loss of vital heat during operation.

1. As to the first of these four: with advancing years a surgeon has an increasing respect for a drop of blood. Hemorrhage is not the only cause of shock; indeed, one may die from shock produced by a blow on the

abdomen, and without any bleeding. Nevertheless, hemorrhage is certainly the main cause. Shock is apt, in its severity, to be directly proportionate to the amount of blood lost.

2. As to the length of the operation, here is a matter too often neglected. In abdominal work, especially, speed is only second to asepsis as the leading factor in success. If the operation lasts an hour or more, in a given case, the patient is apt to "die cured," whereas, with half the time, or less, the great sympathetic centers do not suffer so terribly from the exposure. The most successful gynecologist I know operates with a speed like a sleight-of-hand trick.

Since the introduction of anesthesia, the really rapid operators have become few; and not all surgeons seem to realize how prejudicial to the patient it is to prolong an operation for the purposes of demonstration to the bystanders. I think it would be well if certain operations of grave peril were more often *parted in the middle*, so to speak. In the enucleation of some great tumour of the neck, for example, which has already taken much time, and promises with the careful dissection needed to occupy as much more, and in which the patient is weak—here let us leave our work unfinished, apply a sterile dressing, and wait two or three days if need be, until he is fit to bear the remainder of the cutting. Of course this is no new idea, but it is much less often adopted in practice than would seem wise.

3. As to excessive depth of major anesthesia, we all know that quite aside from the severity of the accompanying operation, this jeopardizes the patient's chances of escaping shock. Occasionally we see the surgeon permitting his assistant to keep the patient snoring heavily throughout. As a rule this, which is an indication of deep paralysis of the velum palati, is needless, and worse.

4. It invites also the fourth main cause of shock enumerated—loss of vital heat. Prolonged and profound anesthesia, as we all know, results in a heavy fall of bodily temperature. And too often, careless exposure of the subject upon the table adds to this chilling.

Treatment.—It is the chief purpose of this paper to endeavour to emphasize the extreme value of certain means of *preventing* shock which would otherwise develop. Upon this plan of campaign against this great enemy can we alone rely for better figures of mortality than those of the past. If we wait until shock has actually struck its blow, too often that blow proves deadly. Where the gravity of the operation or severe loss of blood or other cause makes shock a probability, let the surgeon use the "ounce of prevention" by *striking first!*

Of course we should endeavour to build up the patient's vital resistance by all means in our power. Where weakness from a constitutional dyscrasia or from any removable cause exists, the indication for a preparatory line of treatment is plain. In most cases it is also well to exhibit strychnin in minute doses for several days before a major operation, thereby invigourating the nervous system. But the chief reliance, the one which is already working wonders in the hands of those who know

how to use it, is the free use of intravenous, hot, saline infusion, injected while the patient is still upon the operating-table and asleep from the anesthetic, in cases where the advent of shock, otherwise, seems a probability.

The use of saline solution to treat a patient already collapsed from shock is not a new thing. Neither is it a brilliant success, because nothing is, when severe shock has actually arrived. Some text-books mention it with dubious praise; others almost or quite ignore it. But the thing which is my own suggestion (so far as a study of the "Index Medicus" and the New York Academy of Medicine Library enables me to judge) is the use of this great weapon for good at the right time, and the right temperature.

This plan for the *prevention* of shock has been in use in my clinic since the autumn of 1891, as a consequence of conclusions reached after several months of experimental work upon dogs, with hot and cold vascular saline infusion after bleeding, testing intra-arterial pressures at differing temperatures of the injected fluid, with the kymograph and the mercurial manometer, under the kind supervision of Professor Curtis in the Columbia University Physiological Laboratory during the winter and spring of 1890-91. So far as I have seen printed evidence, other surgeons did not until later adopt this plan in prevention of shock,* and it is commonly ignored even to-day by the bulk of the profession.

In evidence of priority is submitted a brief quotation from the writer's paper read before the Surgical Section of the New York Academy of Medicine, November 9th, 1891, and published in the *Medical Record*, January 2nd, 1892: "Whosoever has noted the vigor with which unstriped muscle everywhere reacts to the use of heat—for example, the much stronger and decidedly more permanent uterine contractions which result from hot post-partal injections as contrasted with cold ones—must believe it probable that such unstriped muscle, forming as it does a most important tonic of the blood-vessels, would be greatly aided by hot saline infusion in regaining its lost tone. Perhaps, too, the central sympathetic centers would feel and respond to this stimulus. Now, since a more vigourous cardiac action (for the heart, though striated muscle, responds to the heat), accompanied by a somewhat restored vascular tone, would go far toward recovery both from hemorrhage and its attendant shock, I have felt that the experiment was well worth trying. (I had tried it as a preventive of shock upon dogs only, before the paper was written.)

Again a quotation from the writer's article in the *Medical Record* for November 12th, 1892: "And why would it not be well at the end of any and every operation grave enough to make shock a probable result (though, because of the ether, not as yet at hand), to inject subcutaneously (*i. e.*, intravascularly) a quart or two of hot salt water? It would be painless, the patient not yet being out of anesthesia. It would certainly be

* Dr. F. Fange did, however, in 1888, advocate diluted claret by rectum to prevent shock, where a very bloody operation was anticipated; and Drs. Weir, Tiffany and others in the discussion approved of water in this way. ("Trans. Am. Surg. Asso.," vol. iv, p. 540, *et seq*)

harmless. And I believe it would do much to prevent, by maintaining filled blood-vessels, otherwise fatal shock from developing. It seems not improbable that we shall ultimately see this done as a matter of routine after all severe operations." At that early date the writer had tried the method in but very few instances to prevent shock, using a half litre or more within the vessel and as much more in the cellular tissues; and could not, of course, speak as all can to-day who have used it properly, with absolute certainty as to its value upon human patients.

In this connection five points deserve especial consideration: (*a*) the place of entrance, (*b*) the proper solution, (*c*) the proper temperature of that solution, (*d*) the proper amount, and (*e*) the speed of introduction.

(*a*) In most cases the median basilic vein is chosen for the cannula. Occasionally a vein in the operating wound will do. The writer demonstrated some years ago that if one is caught short of tools—has no scalpel, no cannula, no dissecting forceps nor retractors at hand—the saline infusion can safely be made to enter the common femoral artery (which, being large enough to admit a lead pencil, can always be felt pulsating if the patient still lives) by aid of a hypodermic needle attached to a Davidson syringe or a fountain syringe.*

We must not neglect to mention that when speed is not a factor—when a prompter stimulant effect is not essential—the rectal route is an excellent one. Even during the operation the maintenance of a full large bowel by means of Kemp's rectal irrigator can only be of benefit, and is additionally a means of safeguard against dangerous chloroform narcosis —by maintaining filled vessels. And after the patient is removed to bed it is sometimes wise (in order to continue the good effects of the intravascular infusion until the danger-point is well past) in bad cases to give the hot colonic irrigation alternately, an hour on and an hour off, for perhaps a half day.

When, following confinement, the accoucheur has a partly exsanguinated patient, he adds wonderfully to her comfort if he injects high up a couple of litres or more of very hot salt water by rectum. It is instructive to note that not a drop of the amount thus poured into the colon will ever be seen again. It is taken up greedily by the thirsty blood. In an emergency, elevating the foot of the bed upon a high chair, and pouring in the salt water through an ordinary tin funnel inserted in the anus, suffices. If the loss of blood has been extreme, intravascular infusion should also be employed; for the condition of the bowel-wall, and of the refuse material coating it, may, at times, have an adverse effect upon ready exosmosis of the salt water from the intestine, rendering this route perhaps less trustworthy.

As to hypodermoclysis, it is the slowest of all methods. The lymphatics are not very speedy in permitting the diffusion of water entering the connective tissues. Also, if the proper bulk of fluid is so introduced, it means quite a number of punctures, painful the next day. To prevent

*For details, again discussed, as to this emergency method see *Medical Record*, December 10th, 1898.

shock, then, I advocate other routes in perference to this. Upon its special value at times in choleraic infant diarrhea I have heretofore written.*

(*b*) The fluid used should be the so-called normal, really decinormal, salt solution, which is six parts of common table salt per thousand, boiled and filtered; roughly a heaped teaspoonful to the litre or quart. So far as we are able to observe, this is as good, practically, as more complicated formulæ resembling more closely the exact chemical composition of the blood-serum. The use of *blood* transfusion, both for treating post-hemorrhagic conditions and shock, has been entirely dropped, as no more effective at the moment than saline infusion, and as being dangerous later, both from possible embolism, and from the certainty that every bloodcell so introduced will speedily break down, threatening to clog the liver and kidneys with the waste products of destructive or retrograde metabolism of tissues.

It does not seem so widely known as should be the case that plain, warm water, devoid of sodium chlorid, must not be used intravascularly. For example, in a recent article in the *Medical Record*,† upon "Saline Infusion," the author, Dr. Reilly, copies without adverse comment a most dangerous bit of advice from Messrs. Bose and Vedel; namely, that "ordinary water is non-toxic, not very destructive to the red corpuscles, and might be used in an emergency." Also, in the "Transactions of the London Obstetrical Society" (meeting of December 6th, 1894), may be seen a similar suggestion by a member, Dr. Horrocks, who was of opinion that the salt was a luxury, but not a necessity. He did not claim however, actually to have ever used plain water in this way, and no member present agreed with him in advising it. It is certain that whosoever tries this, will, if the water be used in the customary large amount, kill his patient with quite indecorous speed by a wholesale disintegration of the red discs. The addition, however, of even so small a proportion of salt as six-tenths of one per cent. renders it safe for vascular infusion. Perhaps a quotation from an experiment of mine at the Columbia University Physiological Laboratory may emphasize this point, which surely needs emphasis.‡ "On May 15th, 1891, I operated on a large dog, weighing before operating 16.77 kilos. On the one-in-thirteen hypothesis (of blood to body weight) his weight of blood would have been 1290 grams, or, allowing for the specific gravity of blood, about 1222.75 c. c. The canula of the mercurial manometer was introduced into the right carotid. The right femoral was used for bleeding, the left femoral for injection of the hot salt solution. Professor Curtis superintended the working of the kymographic needle. Dr. F. J. Brockway assisted me. We drew 563 c. c. of blood."

Upon attempting to replace this, and a smaller subsequent bleeding, by the salt solution, with which at various temperatures I was experimenting, a mistake—a most interesting and instructive one—was made. "Dr.

* *Medical Record*, November 12th, 1892; also December 10th, 1898.

† *Medical Record*, November 12th, 1898. ‡ See *Medical Record*, January 2nd, 1892.

Brockway and I each supposed that the other had added the salt to the hot water; whereas, in fact, neither had done so. And within a minute after receiving a considerable amount of this plain-water injection the animal died." Previous dogs, bled to an equal degree, had done beautifully and recovered under saline infusion. Hence, we were much puzzled until Professor Curtis asked if the salt had been added, and stated that without it water in considerable amount will kill almost as quickly as prussic acid—and in the way already named.

(*c*) The proper temperature for the injection fluid is *as hot as the hand can bear*, and this is about 120° F. or 49° C. (Of course the temperature at the heart, when the great bulk of blood was diluted the slowly entering fluid, will be much lower than this.) There need be no fear of injuring the blood or other tissue by such heat. Very many times the writer has now used it, and never with cause for subsequent regret. This point seems not at all well known as yet in the profession, and nearly all the textbooks still advice infusion at about 100° F. The higher temperature here recommended is very stimulating to the flagging heart, and maintains the tone of the muscular tunic of the vessels. This is well illustrated in the photographs I now show you of kymographic carotid tracings at various temperatures. So recently as last winter Dr Robert Coleman Kemp, at the Columbia Physiological Laboratory, in pursuing some investigations in a somewhat different line, had occasion to repeat my manometric and kymographic experiments of some seven or eight years ago, and re-verified their correctness—he, too, finding that at 118°-120° F. the tracings showed the best results upon heart and vessels. His statements were published in the *Record* early last autumn.

To maintain the desirable degree of heat, the reservoir containing the water should be wrapped in a large towel or sterile blanket during the time occupied by the act of infusion.

In Dr. Reilly's article, quoted, he mentions a conclusion of Athansin, a French experimenter, upon this matter of the proper heat, which I must believe to be an error. He says: "In animals, at least, solutions having a temperature of 165° to 175° F. can be safely used." Now, upon reference to Kirke's "Physiology," eleventh edition, p. 846, it will be seen that globulin coagulates at 70° C. (158° F.), and Dalton's "Physiology," seventh edition, p. 80, affirms that serum-albumin clots at 72° C. (162° F.).

It will be noted, however, that both 158° F. and 162° F. are about 40° F. hotter than the hand can support, as above stated. So that the temperature which I advice is a long way from being unsafe. The hand-test of the heat, as suggested, will be found both safe and accurate enough in actual pactice.

(*d*) The proper amount of the injection fluid may be set down, for the adult, as never less than a litre, often two litres, and occasionally, perhaps even three litres, injecting always very slowly. To give a half-litre or less if, for the prevention of shock, almost valueless. The limit of

safety as to large quantities has not as yet been very exactly formulated. The kidneys readily remove any water from the blood in excess of its needs. Should these be diseased, a less amount must of course be employed than otherwise.

(e) The time occupied in introducing the fluid into a vein should never be less than ten minutes per litre. To be sure, I have seen it caused to flow with double this speed and without ill effect; but, on the other hand, a temporary period of threatening heart-failure to this cause—a rapid overstimulation—has been at times observed.

Of late we have all noticed in the journals that a few enthusiastic friends of this plan of preventing shock by saline infusion are using it at the *beginning* of the operation—before even a drop of blood has been lost, or any strain whatever put upon the nerve-centers. If this were only done by the plan of keeping the large bowel full of hot salt-water, I should find no fault for here the blood will to some extent take up water only as it needs it. But I doubt the wisdom of the preliminary distention of vessels by intravenous infusion; for one reason, because it is plain that by such a practice we add to the amount of blood lost. For every spurting point will, from increased pressure, spurt much more vigourously before it can be caught, than otherwise it would do.

Just a word as to the repetition of the dose. Many times I have read of surgeons using it once in a given case and reporting a temporary good effect, but that subsequently the patient died of shock. Now, of course no method can save all cases of every dangerous disease; but common sense would teach us that if a dose obviously does good it should be repeated, and this so long as the same indications call for it. From this it does not follow that we must open a vein again and again. The rectal hot saline douche will, if rightly used, give approximately as good results for such purposes. The bed should always have its foot elevated very high, and this should always remain so until danger of shock is well past. This position maintains a better supply of blood to both brain and heart, and also helps in the retention of the fluid in the large bowel. Alternately an hour on and an hour off seems to produce more desirable results than a steady maintenance of the flow through Kemp's tube. I think it wise not to consider the patient past his danger until the pulse becomes as low, at least, as 120 per minute, and shows no tendency to occasional increase above this number.

Thus far I have discussed the *prevention* of shock, but have said nothing as to its treatment when actually developed and threatening the patent's life. Concerning this last I have little to say, and that is not new. If we are unfortunately called to an accident case and find the victim in collapse, which is another name for shock, hot saline infusion is worth trying—but with small hope. Strychnin hypodermically is probably, when used freely, our best reliance. Some surgeons use it even to the point of producing slight spasms—if the shock does not yield earlier. Hot applications about the person are essential—elevation of the foot of

the bed, a help. But two prominent "*don'ts*" should never be forgotten, namely, *don't* over stimulate the heart, and *don't* give a particle of food by mouth, nor any medicine even remotely capable of causing nausea.

If the pulse come down to anything like reasonably safe numbers—as discussed a minute ago—let well enough alone; for if that tired heart be over-whipped it is likely to quit work. And as for the second "*don't*," what is nausea in all of its symptoms but one type of shock? There is the cold, wet skin, the weak pulse, the sensation of vital collapse; and no one should take the least risk of adding this—if not already present—to the surgical shock.

The duration of shock is not many hours, as a rule—as to its worse phase.—Certainly it is not so prolonged but that the patient may easily have his strength substained during this period, without using his stomach—by nutrient enemata, or hot coffee by rectum, etc. And any needful remedies which might otherwise possibly nauseate can surely also be administered by this route, or better still, by needle. I dwell upon this matter, because one so regularly sees this "*don't*" neglected, to the patient's detriment.

I wish that time permitted a discussion of the question of amputation of crushed and lacerated limbs during the shock, and of the relation of anesthesia to this question, but this is impossible.—*Medical News.*

THE TREATMENT OF HARELIP AND CLEFT PALATE.

This much-discussed topic continues to be the subject of a good deal of doubt in many minds as to when and how to operate for the various conditions that present themselves. Many of the procedures necessary are entirely within the range of the general practitioner, but there always remains a feeling of hesitation as to the methods most advisable to employ, and the most suitable time for operation. Towards solving such doubts an authoritative review of the recent literature of the subject, and conclusive statements as to what seems best in the therapeutic suggestions that have recently been offered by various writers will be of the greatest value to the busy practitioner.

Such a review of the treatment of Harelip and Cleft Palate is given by Dr. J. Chalmers DaCosta, in "Progressive Medicine," the new Quarterly Review of Advance in Medicine, of which Professor Hare is the editor From it we gather that the tendency is more and more towards early operation. The third or fourth month used to be considered the earliest suitable time to operate. Murray now counsels operation in the fourth week; Mumford and Heath think it should be undertaken not later than from the sixth to the eighth week. Where cleft palate exists it is not operated upon so early. The harelip is operated upon alone, and the persistent pressure made by the closed lip helps to lessen the gap in the growing bone. The operation on the cleft palate is put off for awhile, but this, too, not nearly so long as it used to be. If the closure of the defect is delayed until the child has learned to talk, the peculiarities of speech, especially its offensive nasal character, will never be corrected. The authorities are agreed, then, that a cleft in the soft palate should be closed about the sixth month, and in the hard palate during the second year.

The practical suggestions collected from the recent literature of the subject by Dr. DaCosta are very valuable to the ordinary practitioner. Space will permit us to give but a few of them. The use of the knife in operation rather than the scissors, because the latter crushes tissue more, leaving its vitality impaired, especially at the edges where this is so important for subsequent union; the avoidance of pins or heavy sutures in securing proper apposition after the operation is advised, though these are faults of technique in this matter that we fear have been so ground into the present generation by text-book and teacher that failures of union due to these crude early methods will still continue to be frequent. The suggestion by Mumford as to anchoring the nares with shotted wire will remove a very common cause of failure due to the child's inevitable tendency to "turn up its nose" at and after the proceedings.

In double harelip it is advised to remove the intermaxillary bone by sub-periosteal operation a week before the operation on the lip. If left it is liable to undergo necrosis. Its removal leads to some flattening, but this will not be great if the bone be removed by sub-periosteal operation: and if but one side of the harelip be operated upon at a time. Among the directions for the operation for cleft of the hard palate, we note these

pre-operative measures of precaution from Owen, which are sometimes forgotten, but of which the practical value it is easy to see: never operate unless the child is in the best possible health; remove carious teeth, adenoids and enlarged tonsils before operating, and operate whenever possible in fine weather, so that the patient can get out of doors soon afterwards. The neglect to remoxe such ready sources of infection as carious teeth and those harborers of microbes, the irresistive tissues of adenoids and enlarged tonsils, is very probably the source of a good many of the failures in uranoplastic osteo resection.

Announcement.—CONGRÈS PÉRIODIQUE INTERNATIONAL DE GYNÉCOLOGIE ET D'OBSTÊTRIQUE.—3e Section, Amsterdam, Aout 1899.—Secretariat Sarphatistraat 1h. Amsterdam, September. 1898. Dear Sir,—We have the honour of soliciting your presence at the 3d Intern Congress for Gynecology and Obstetrics to take place at Amsterdam from the 8th to the 12th of August, 1899, under the patronage of the Minister of the Interior. The leading questions for discussion will be the following: 1°. The surgical treatment of fibro-myoma. 2°. The relative value of antisepsis and improved technic for the actuel results in gynaecological surgery. 3°. The influence of posture on the form and dimensions of the pelvis. 4°. The indication for caesarian section compared to that for symphyseotomy, craniotomy and premature induction of labour. We have succeeded in obtaining the valuable concurrence as reporters of M. M. Doyen, Howard Kelly and Schauta who will treat the first question; M. M. Bumm, Richelot and Lawson Tait the second; M. M. Bonnaire, Pinzani and Walcher the third, and M. M. Leopold, Pinard, Pestalozza and Fancourt Barnes the fourth. We propose sending the reports with their translations in the official languages to all the members, a month before the opening of the Congress. As regards private communications, preference will be given to those bearing upon the above mentioned leading questions. Time will also be allowed sufficient for any demonstrations kindly afforded by the members. The official languages are: English, French, German and Italian. We venture to urge our request that you will honour the Congress with your presence and, by communicating your experience, insure scientific results as satisfactory as those obtained by the previous Congresses of Brussels and Geneve. Subscription form. —I (1) residing at (2) hereby declare my adherence to the 3rd Session of the periodical International Congress for Gynecology and Obstetrics, to be held at Amsterdam on Aug. 8, 1899, and agree to pay the sum of one guinea for my share of the contribution. Signature: I founder (membre fondateur) (3) of the International Congress for Gynecology and Obstetrics, hereby state my intention to be present at the next Congress, which will take place at Amsterdam Aug. 8, 1899. Signature: The committee: H. Treub, President, J. Veit, Vice-President, G. C. Nijhoff, J. P. Barnouw, Treasurer, M. A. Mendes de Leon. Please address all communications to J. D. Emmet, M.D., Secretary for America, 91 Madison Avenue, New York, N.Y.

(1) Name, surname and quality. (2) Exact address.

(3) Founders (membres fondateurs) are those who having paid the sum of 300 francs, are thereby exempt from all further contribution to future congress.

TORONTO CLINICAL SOCIETY.

The fifty-fourth regular meeting of the above society was held in St. George's Hall, Elm St., on Wednesday evening, May 10th, at 8.30 p.m., the president, Dr. F. L. M. Grasett, occupied the chair.

Fellows present: Drs. J. A. Temple, E. E. King, Ryerson, H. J. Hamilton, McIlwraith, Bruce, Boyd, Primrose, Small, William Oldright, Lehman, Peters, Badgerow, Thistle, Britton, Macdonald, Bingham, Fenton, Greig, Pepler and George Elliott.

In connection with the adjourned discussion on severe injuries and crushes involving the question of amputation, Dr. E. E. King showed two cases of injury of the foot and hand respectively, both street car accidents, in both of which nature had effected the cure. Dr. William Oldright also showed a case of injury involving the question of conservative surgery and described the conditions present.

Dr. Primrose introduced a patient, a woman whom he had seen for the first time on Christmas morning, 1898. She had fallen on her outstretched hand on a piece of crockery ware. The flexors sublimus and profundus of both index and little fingers were completely severed. The superficial palmar arch with much bleeding and the cut was carried down to the metacarpal bones. The tendons were sutured with difficulty owing to the retraction, kangaroo tendon being employed. A drain was put in the outer angle of the wound and it healed without suppurtation, although there was a good deal of dirt in the wound at the time of the injury. The nerve passing to the index finger was sutured, but he could not secure the other nerves. The person has sensation in that finger.

Drs. Peters. E. E. King and Oldright continued the discussion of the several cases presented.

UNUNITED FRACTURE. (Dr. J. A. Temple.)—The subject of this case was a young lad of 14 years. He was seen first by Dr. Temple on October the 31st, 1898 for an alleged dislocation of the right shoulder which had occurred five weeks previous to the time he was first seen by Dr. Temple. The injury was received in a football game. He was thrown violently to the ground and received an injury of the upper part of the right shoulder. He was seen shortly afterwards by a physician, and the diagnosis then was dislocation of the right shoulder. The arm was then put up in splints with the arm close to the body and strapped across it. The boy was kept in that attitude for four or five weeks during which time he suffered from a great deal of pain. When Dr. Temple saw him the arm was still in a sling, and when taken down it hung alongside his body. He could not raise it from the side of his body, but he could take hold of it with the other hand and lift it up. On examining the arm Dr. Temple felt quite satisfied it was not a fracture dislocation but an ununited fracture. The boy was fairly stout, but you could feel very distinctly that the lower part was very near the surface. The jagged end of the bone almost protruded through the skin.

He thought he could make out that the head of the bone was in its proper position. The lower fragment laid outside the upper one. He felt quite satisfied a fracture existed and that it was not a case of dislocation. Dr. King has made skiagraphs of the case which show clearly the nature of the accident. (Two skiagraphs here exhibited.) In the first one, looking at the arm from behind, you can see the outline of the scapula beautifully, the lower fragment lying outside the upper. In the other the front view was not very satisfactory. Drs. Cameron and Grasett saw the case in consultation. The treatment proposed was to try under chloroform to reduce the fracture. But it was absolutely impossible to dislodge the fractnre. It could not be brought down although two surgeons pulled at either end. Dr. Grasett made an incision but he could not dislodge the fracture even then. After breaking down the fibrous union it could not be done. We then removed a piece of the lower fragment and brought the ends into very fair apposition. The bones were not wired. We put the arm up in an extended condition, out from the body, with a rectangular splint along the outer side and up over the shoulder, and another one on the inside making extension. He was kept in that position for a week or two and then Dr. King made a second skiagraph about ten days after the operation. This shows the arm looking at it from the interior surface, and you will see the bones are in position. We got the bones in as normal a shape as we possibly could, but not completely plumb together. For a period of six weeks the part was not disturbed, then the splints were taken off and the injured boy has the most complete use of his whole arm. He can play hockey, baseball, etc., and has complete movements. The result has been most gratifying without wiring. Dr. Temple asked for an expression of opinion from the Fellows regarding the treatment of these cases.

Dr. Grasett: When we made that incision and tried our very best, even using levers to throw the lower fragment in, we could not do it. We then took off half an inch of the lower fragment, and then it came together comparatively readily. He further stated that Dr. Cameron thought there was no occasion to wire. He had treated these cases, sometimes wiring and sometimes not.

Dr. Peters discussed the case at some length. He did not think the case one of ununited fracture and could not see why it should be called such. Any other treatment than opening up the parts would not have resulted so well.

Drs. Primrose, Oldright, E. E. King and Britton continued the discussion for some length of time, instancing similar cases seen in their own practices.

Dr. A. A. Macdonald spoke in reference to the use of screws in cases where the fractures were oblique.

Dr. A. A. Macdonald showed an appendix removed from a scrofulous lad, who had been the subject of two or three previous attacks of appendicitis with a good deal of pain in the region of the appendix.

2. A specimen of cystic ovary somewhat bound down, occurring in a woman who was insane. The irritation of the ovary, he thought, had something to do with the mental condition.

3. A specimen of fibroid tumor of the uterus, growing sub-peritoneally from the upper part of the fundus. This he enucleated, tying off the vessels.

4. A specimen of a sub-mucous fibroid from the interior of the uterus. The woman from whom Dr. Temple and he himself, had removed this was suffering from an ovarian cyst. The peculiar condition was not recognized before, owing to the hardness in the vicinity. It was not recognized until the patient was on the table.

ELECTION OF EXECUTIVE COMMITTEE.—The following Fellows were elected the Executive Committee for 1899-1900: H. B. Anderson, H. A. Bruce, G. Silverthorne, Geo. W. Badgerow, Geo. A. Peters.

GEORGE ELLIOTT,
Recording Secretary.

Yellow Oxide of Mercury in Surgery.—It seems rather late to advocate the use of salves in surgery but the results achieved by A. J. Ochsner, at the Augustana Hospital in Chicago, with the use of an ointment containing yellow oxide of mercury, is worthy of extended notice. The impossibility of sterilizing the skin has long been recognized. No matter how thorough the cleansing nor how strong and penetrating the antiseptics employed, it is only the outermost portion of the skin of the hands or of the field of operation that can be rendered aseptic. This will be denied by some who claim that under a particular technique the hands of the surgeon can be rendered thoroughly aseptic, This is probably true for a short time, but after the hands are employed in manipulating the wound, tying sutures, or other movements, the bacteria in the glandular appendages of the skin make their way to the surface. The same thing is true of the field of operation—only the more superficial layers of the skin can be rendered aseptic and the passage of a needle or the drawing of a suture through the skin may effect the deeper layers of the wound. These reasons have led Ochsner to employ an ointment of the yellow oxide of mercury for its powerful antiseptic properties. With its use he claims to have practically eliminated stitch abscess and infection from the skin in his operations. There would seem to be a reasonable basis for this belief in the known antiseptic properties of the drug. There is no question as to its value in inflammation of the meibomian glands of the eyelid. Rubbed into the edge of the lid, it penetrates the ducts and unquestionably in many cases it aborts a purulent inflammation already established. The same sort of action is claimed for it upon the edges of the wound in preventing stitch abscess or deeper inflammation.

A DIP INTO AN OLD NOTE BOOK.

In these modern days, when everything is placed briefly by authors to publishers and by them before a keenly critical public,, we would ask ourselves is it waste of time to con over the note book of a student in medicine who studied earnestly and leisurely when this century was young ?

Such a book lies before us, bearing the imprimater " Arthur Mower Edinburgh, 1817," and presented to the writer by the nephew of this old-time student.

Is it worth while, in the face of of modern medicine, serum-therapy and antitoxines, elegant Pharmacy and pure alkaloids, pathology, with its handmaiden microscopy, collecting here and there from this old manuscript, in its " sear and yellow leaf "—its faded ink, some oldtime clinics, diagnoses and treatment—leaving the via. rectus, the " cinder-path " and x-rays, to deviate into an unfrequented lane and delve a little in the mould or peal the lichen off a long past mile-stone of 80 years ago ?

Would any lesson be learnt or curiosity satisfied—a half an hour whiled away in reverie ?

" Elephantiasis : John Paterson at 16th March, 1817." " The features are very much deformed and the face is almost completely occupied by hard tuberculated elevations of the cuticle. Those deep seated are large and irregular, in some places covered with white thin furfuraceous scales of a higher color than the natural skin, while the more superficial tubercles are of a still more dark complexion and exhibiting a number of small blood-vessels ramifying on their surface. The alæ of the nose are swelled and the apex of it is occupied by a dark brown thick scab, the lips are tumid and covered with scales. The external ears are considerably enlarged and thickened, and the right more particularly is beset with tubercles.

The voice is hoarse and obscure, deglutition is painful and difficult and on examination the tongue, roof of the mouth, inside of the lips and cheeks, velum, tonsils and uvula are perceived to be occupied with numerous small white tubercles with considerable erysipelatous inflammation of the parts and slight ulceration of the velum near the base of the uvula.

In the upper and interior part of each thigh, there is a cluster of large lymphatic glands, forming a moveable, rather soft prominent swelling, more particularly in the left, without any discoloration of the integaments, or pain. The thighs retain their natural form, but are everywhere covered with large, irregular patches of a light brown, copper color and numerous small flattened tubercles. The parts of the skin thus dissolved and tuberculated, are in a great measure devoid of sensibility ; and piercing it with a sharp pointed body so as to cause a flow of blood, does not produce the slightest degree of pain.

At no period of the disease does it appear to have been attended with uneasiness. He constantly experiences a sense of constriction across the chest, with pain under the short ribs of the left side and palpitation of the heart on exertion, without cough.

For three weeks past he has been subject to gastrodynia, cardialgia and acid eructations after taking food The abdomen appears slightly tumid, but no distinct induration is to be felt in any part of it. P. 93, T. moist, urine high-colored and depositing a copious, latertitious sediment. The ankles and feet are swollen towards evening.

℞ Mist. Diaphor: Antimon: ℥i
Sig: 3a q. q. hor:
℞ Super Tart. Potass, bis in die.
Basin of tea morning and evening–table-broth for dinner.
17th March: ℞ Pi. Sub. Mur. Hydrarg Comp.
Sig. i omni nocte
18th ℞ Vin. Rub: ℥ xvi
aqua ℥ iv
Beefsteak for dinner daily."

Such is the case no looking to alterative treatment, no liquor Donovanii—no iodides.

We may infer from clinical notes that the case became a stand-bye for successive students for a couple of years or so, after which aggravated cardiac trouble prevailed, ending in complete anasarca and death.

At the same time Molokaio and Tracadie have many such cases in their lazarettos, and Father Damien gazed in melancholy on just such environment,

Some Treatment:—"Isaac Ford was admitted for hepatitis P. 120 full. T. loaded, thirst considerable, B. regular. Attacked with dyspnea a week before, cough, succeeded by pain at lower end of sternum. General lassitude and indisposition.

Emitt. c brachio Sang: ℥ xij
Vesicatorum pectori Infus, lini.
20th. ℞ Pulv. Antimon. Sacchari āā ℈i
Tere Simul et divide in dos. Vi.
Sumat i omni bihoris.
Cont. Mist Mucil. Infus. lini.
24th Breathing appears less laborious but cough is frequent and expectoration scanty.

Countenance livid, restless night with delirium p. 116. About 16oz. blood withdrawn which shows the buffy coat—blister applied this morning to right side of chest, ℞ Mist Mucil. ℥vi
Tinct. Digitalis ℥ss.
Cujas sumat ℥ss. 2 da qua hor.

25th. Pectoral symptoms, reported above, still continue. ℥xvi of blood again drawn which shows more of the buffy coat than the two former bleedings.

Better night, cough still frequent, expectoration scanty. P. 90 intermittent. No food taken.

T. clean and moist. Blister gave good discharge Vin. Rub. ℥iv. Bov. lbi. sponge biscuit.

26th. Died this morning.

Was this not a case of pleuritic effusion rather than hepatitis'. If the former, would not venesection to 44 oz. be liable to increase effusion though counteracted somewhat by blisters? Were not diffusable stimulants indicated? Was the digitalis in such doses effective? Was cyanonis and cardiac weakness not apparent? Was not the 11b. of beef intended for the predecessor of Sairy Gamp.

The following differential diagnoses re delirium tremens are given.

"Delirium tremens appears to be distinguished from real inflammation by the absence of pyrexia, of pain in the head, at least as an urgent symptom, of determination of blood to the head and of intolerance of light and sound, while bleeding, if resorted to, produces no abatement of the disorder.

It is to be distinguished from mania by the previous history of the patient; by the tremors and by the state of the pulse; and from the delirium of low fever by the want of any previous febrile affection; by the moist and slightly furred tongue, by the skin being generally moist though varying in temperature, and especially by the disproportion between the degree of strength and the state of the pulse, for such a pulse in fever can only occur in the last extremity of weakness and would be regarded as a sure mark of approaching dissolution. Its own peculiar marks are, its occurring, as it appears, in persons who havebeen addicted to intemperance in drinking, the attack having been preceded by anorexia, abberation, coma vigil. The tremors and peculiar picking so different from what has been called, collectio floccorum, the unwearied watchfulness and delirium, sometimes moderate and tractable, at others raving and furious, but seldom irascible; the pallor and anxiety of countenance and the frequency of the pulse, while the strength is not proportionately reduced."

All this is very quaint, very Grandisonian, may we say Watsonian?

Here are some of the oh-Jupiter-aid-us! prescriptions in such a case.

"℞ Pilulae Hydrargyri
Gambogiae āā ℥ss
Misce et divide in pilulas xij, Capiat iij statim et omne nocte
℞ Magnesiae Sulphatis ℥ii
Aqua Menth Viride ℥vii
Sp. Lavendulae Comp, ƒ℥i
Misce. Fiat mistura cujuscapiat cochlearia quatuor magna sextis horis."

Though they had no Bromides nor Chloral the following will explain itself:—

"℞ confectionis Aromaticae ℥ij
Liquoris Ammoniae acetatis ƒ℥ij

Spiritus Etheris Nitrosi *f* ℥ij
Mistura Camphora *f.* ℥vi
Misce, fiat mistura cujus capiat cochlearia iij 6 tis horis.

We fancy some readers will agree with the wag who opined that prescriptions were written in a dead language out of compliment to the expected demise of the patient.

Dec. 1817 finds Mr. Mower pursuing post graduate studies in Paris :—

"Attended the visit and lecture of Monsieur Dupuytreu this morning, at the Hotel Dieu. The visit from six till half past eight, then his lecture commenced in the Amphitheatre. It was on the patients he had just been visiting. The lecture lasted an hour; he then opened the corpse of a man who died from a fall; he showed the nerve, which spreads itself on the diaphragm and gives branches to the intercostal muscles, had been torn; the muscles of respiration being thus deprived of nervous influence could no longer perform their office; respiration ceased, then the circulation, and lastly death reached the brain itself. An operation was performed on the person of a young girl, in cutting out a fibrous (sic tumor from her breast. After breakfast went to the dissecting room, and began the lower extremities of an old subject observed the abdominal ring, the crural arch, under which come the great vessels in descending to the thigh and some of the vessels of the fore part of the thigh.

9th. There are at present a great many patients in the Hotel Dieu with small sores on their legs and arms; these are often very tedious and difficult to cure. Monsieur Dupuytren merely applies lint to absorb the matter and linen bandages. He dissected, or rather opened, two corpses after his lecture. One was the body of a man on whom he operated for the stone, being too large to be extracted at once, it was obliged to be broken—the man died. It is to be remembered that on performing lithotomy if any outward accident should keep the patient long upon the table he stands a much worse chance than if the operation had been quickly performed.

Dissected a subject at the Pitiè, the body was that of a young man, not more than thirty, he was wasted and the face was very pale, the venous system was very turgid, which generally indicates a slow death from some disease in the organs of respiration—the venous blood not passing through the lungs with the rapidity necessary to a proper oxidation. The venous system becomes overloaded and the patient dies.

On opening the chest the lungs adhered everywhere to the pleura, and they were an entire mass of disease, filled with tubercles and several abscesses.

One remarkable appearance presented itself on the interior surface of the right lung. A large tubercle had been formed several inches long and about an inch in breadth, ¼ inch in thickness.

This tubercle consisted of an outer membrane which formed one entire cyst which was filled with greenish matter, soft and cheesy, with the same appearance as the matter afforded by a scrofulous tumor.

This seems to confirm, that scrofula is akin to consumption or rather a modification of scrofula.

Jany. 1818. Dissected the body of an old woman who had evidently died from inflammation of the bowels, the inflammation was perceptible chiefly on the jejunum, the vasa vasorum were turgid and exhibited the appearance of seaweed on the surface of the intestine. The inflammation increased as it descended, and a great accumulation of fæces was present. In the transverse arch of the colon several strictures were observable, which in one place nearly occluded the bowel. The abdominal viscera were displaced. The stomach reached nearly to the pubic region. The right lobe of the liver descended into the lumbar region of the same side. Remarked more particularly in this subject the foramen of Winslow which opens just under the lobulus spigellii into the great sac of omentum.

This body was very remarkable for a number of morbid phenomena. In the broad ligament of the womb, on its right side, between the fimbriated extremity and the upper part of the ovarium, were found 8 or 9 little bodies of a brownish color in appearance, like little bubbles or vesicles.

Womb—its neck was much thickened, and its internal cavity was occupied by a large polypus exactly shaped by the cavity. The passages through the Fallopian tubes were stopped. Observed the glandular orifices opening internally on the neck of this organ, signs of inflammation very evident about the os tincæ. On the larynx was found a cyst of considerable size quite independent of cellular substance and slightly adhering by its upper neck, on opening it pus came out.

In the left kidney were four calculi of a dark color, apparently urate of lime. It was completely diseased. The hœmorrhoidal vein was found to communicate with the hepatic.

The bladder was thickened and signs of inflammation were observed about the exit of the ureter.

The aorta was curved just after giving off the cæliac branches."

Truly this was a veritable pathological mine, perhaps the mitral valves were out of gear, and cerebral tumours were in evidence.

This aged harridan had evidently lived free and easy.

> "Diseases desperate grown
> By desperate appliances are relieved,
> Or not at all."

Napoleonic wars are over—the Peace of Paris is sustained, Alsace and Lorraine are not yet Germanized and the reader has been lured out of a precious half hour—for which we apologize.

C. O'GORMAN, M.D.,
Depot Harbor, Parry Sound.

MOVABLE KIDNEY IN CHILDREN.

Floating kidney has been considered of rare occurrence in children. Dr. Jules Comby, however, believes that it is more common than is usually supposed. In writing upon the subject in a recent number of the *British Medical Journal*, he reports eighteen cases. He has watched for these cases for several years, which no doubt, largely accounts for the number seen. He believes that the condition is not uncommon at any age, though it is evident that it is less common in children than in adults, particularly in thin and anæmic women.

Of the eighteen cases reported by Dr. Comby, two were aged respectively one month and three months, six were between one and ten years, ten were above ten years of age. But these figures corresponded only to the dates of the examination and diagnosis; the mobility no doubt dated further back than this; sixteen of the cases were girls, two were boys, the same proportion of the condition in the female sex observed in adult life. In fourteen of the cases the mobility was associated with dyspepsia and dilatation of the stomach; herditary syphilis was obvious in two cases, chlorosis in two, lienteric diarrhœa in one, migraine in one, and psoriasis in one. In nearly every case the affection was latent, in two it had been mistaken for a chronic appendicitis, twice it had been found and treated.

As regards cause it was not possible to attribute it to the pressure of the corset, as the greater number of the patients wore neither corset nor belt. Nearly all were dyspeptic, having gastric troubles or pains in the stomach, suffering perhaps as a result of gastro-intestinal distension to which ill nourished children are subject, from elongation of the suspensory ligament and prolapse of the viscera.

The congenital origin of floating kidney is believed by Litten, Gutterbock, Ewald, Albarran to be the explanation of all cases. The kidney is possibly provided with a too lengthy pedicle, which causes it to float in the abdomen either spontaneously or as the result of some special effort of a distension of the stomach, of a tight constriction, or of a hypertrophied liver, or an injury. It is difficult to say why women are more liable to this organic displacement than men, but no doubt it has some connection with the abdominal conformation of the former.

THE SYMPTOMS OF MOVABLE KIDNEY.—The symptons, as stated by Comby, are variable and frequently obscure, and do not afford much guide to diagnosis; often the affection is absolutely latent, and is passed over Sometimes there is paroxysmal pain, which, on account of its seat on the right side, is attributed to appendicitis. The pains may come on after some unusual effort or fatigue.

In our own experience, movable kidneys have always been very sensitive to the touch and have continued more or less sensitive as long as they were out of normal position. Numerous cases have been reported, however, in which the tumor was neither painful nor sensitive to touch.

In rare cases the kidney may become twisted and the ureter occluded, and a hydronephrosis, which may be either transitory, intermittent, or persistent, may supervene. Dyspepsia or constipation is often associated with a moveable kidney. But no one symptom can be relied on, and the right iliac region must be carefully explored.

While in some cases of movable kidney, the diagnosis is difficult, in others it is extremely easy. In no other condition is a hard, round, movable mass discovered in the abdomen suddenly. This tumor is sometimes so distinct that it can be grasped in the hand. In other cases it is somewhat fugitive and can only be grasped through the abdominal wall by supporting the lumbar region with the other hand. The mass usually appears near the umbilicus or in the hypogastric region.

The younger the patient, the more difficult is the diagnosis. The condition is often undiscovered because there are no symptoms; investigation of the part is difficult, and a child does not lend itself satisfactorily to exploration. But none of these difficulties are insurmountable. Among the conditions, according to Comby, with which it may be confused are to be remembered: Coprostasis, appendicitis, different cystic or solid tumors of the kidneys, perinephritis, stone. It is not impossible to eliminate these different possibilities before proceeding to diagnose the existence of movable kidney.

TREATMENT OF MOVABLE KIDNEY.—The treatment of movable kidney is not entirely surgical, in nearly every case some medical treatment is indicated, and in many cases no surgical treatment is required. When the affection, according to Comby, is latent or well borne, when the pains are moderate or intermittent in character, rest and an abdominal belt may suffice to relieve. Bandaging rarely succeeds on account of the great mobility of the displaced kidney. A flannel bandage wound several times round the body, and supporting the entire abdomen, is the best means of immobilization that can be devised. A bandage, however, tight enough to support the kidney, is apt to cause colic or distress to the child.

It is of the highest importance that straining of the abdomen should be avoided. Hence, the bowels should be kept regular and free; dyspepsia should be promptly treated and abdominal indigestion prevented if possible Acute attacks of indigestion with vomiting should receive prompt treatment, for the act of vomitting is one of the most certain means of forcing a kidney from its normal position. It is practically impossible to keep a kidney in proper position after it has been once or twice displaced, if the child is subject to attacks of acute indigestion with vomitting.

The case should become a surgical one, if the pains persist or become unbearable, or attacks of peritonitis or hodronephrosis through twisting of the ureter occur. An operation should then be performed for fixing the kidney to the posterior abdominal wall.

THE JACOBI WARD FOR CLINICAL INSTRUCTION.—The recent opening of this ward at Roosevelt Hospital was an important event in the history of pediatrics. It is, we believe, the first ward in this country designed

for the clinical teaching of pediatrics to students of medicine. It is the result of a gift of $50,000 by some person whose name is not announced to the public.

The ward forms part of a new pavillion erected in the grounds of Roosevelt Hospital, It is connected with both the hospital and the Syms operating pavilion. The terms of the gift provide that Columbia University shall name the clinical teachers. Dr. Jacobi is now holding clinics in the ward in addition to his regular clinics in the College of Physicians and Surgeons. The system of instruction is bed side teaching to small sections from the college classes. Such teaching is essentially different from that given in the usual amphitheatre clinic or dispensary class. It has long been regarded as one of the most important factors in medical education in other departments. It is satisfactory to know that pediatrics is at last able to boast of at least one such ward in this country. The opening of the ward, designed as it is primarily for bedside instruction of medical students, marks an epoch in the teaching of the diseases of children. It seems very appropriate that the first ward designed for this purpose should bear the name of the man who has inaugurated so many advances in the teaching and practices of pediatrics. It is a most fitting tribute to his life of devotion to that department of medicine.

The wisdom of the person endowing this ward, whose name we do not know, is certainly deserving of more than passing mention. The first and primary object of a hospital should be to afford the best care of the patient which it is possible to give. This aim we have before had occasion to say should never be sacrificed to any other consideration. A second and scarcely less important object, and in no way incompatible with the first, should be to render the knowledge constantly gained in hospital wards, available for the common good, and to spread the humane influences of the hospital far beyond its walls. Every hospital should. therefore, be a teaching institution so far as it is possible without detriment to its patients. The advantages of instruction in its wards should not be limited to a few internes. When these principles are adopted and practised broadly and humanely, the good wrought within the hospital structure, be it ever so great, may be small compared with the good which those instructed in its wards accomplish year after year, far and wide through the community.

The influence for good of a teaching hospital is beyond computation and the individual who endows a hospital or ward of that character shows great wisdom, which, unfortunately, does not always accompany generosity and philanthropy.

TREATMENT OF INFECTED WOUNDS.

BY DANIEL N. EISENDRATH, A.B., M.D.,

Professor of Surgery, Post Graduate Medical School; Attending Pathologist, St. Luke's and Michael Reese Hospitals.

For the general practitioner, and especially for those of us who devote our energies to surgery, this is one of the most important subjects with which we have to deal. An accurate knowledge of this seemingly unimportant chapter in surgery and a clear understanding of the treatment of infected wounds is absolutely essential in order that the general practitioner may keep abreast of the constant onward march of modern surgery. Before taking up the treatment of infection in detail, it will be well for us to review shortly some of our present knowledge of the subject. It will be unnecessary to go into the history of the advancement of our knowledge from the time of the discoveries of Lister and Pasteur to those of the pyogenic microorganisms by Rosenbach.

It will be sufficient to state that at the present time the organisms concerned in pyogenic infection are the staphylococcus pyogenes aureus and albus, the streptococcus pyogenes, the bacillus pyocyaneus, and the bacillus pyogenus fœtidus. The less frequent cases of infection of wounds with the colon, typhoid, anthrax, and diptheria bacili and the bacillus proteus may be left out of consideration here. In practice the majority of cases are due to the infection with one of the varieties of staphylococci, which on account of their manner of growth produce a circumscribed form of suppuration with more or less thick, yellowish pus of the consistency of cream, and secondly with the streptococci, which, owing to the fact that they form chains in growing instead of small clusters of organisms, have a tendency to cause a progressive infection of the wound with the production of a thinner, less viscid pus, looking more like turbid blood-serum.

Both groups act through their toxins in two ways: First, by chemotaxis they cause a hyperemia of the part infected, with the migration of leucocytes from the blood-vessels and young connective tissue cells to the spot of infection to act as phagocytes or poison destroyers; in other words, all the phenomena of inflammation, as we understand it at present, are a defense on the part of the tissues against invasion of the enemy. Secondly, if this battle has been successfully waged by the microorganisms, their poisons liquefy the tissues by peptonizing or digesting them, in the same manner as they liquefy the gelatin in our test-tube in the laboratory.

Some interesting experiments have been made during the past few years upon the rapidity with which absorption begins in infected wounds. Shimmelbusch infected the tails of mice with anthrax bacilli, and cut off the tail at different intervals proximal to the point inoculated. He found that absorption is so rapid that if the tail were cut off after ten minutes had elapsed, the animals could not be saved. Many others (Reichel

Hanel, Messner, and Henle) came to similar conclusions. These, however, were misleading, owing to the fact that infection of our wounds does not take place by pure cultures, and but rarely by pus, both of which were the methods employed in these experiments. Friedrich has attempted to reproduce the conditions as they are found in nature. He found that animals died in fifty-four hours, on an average, after inoculation with garden earth, and in thirty-one hours with dust. Absorption from the wound began about six to eight hours after infection. and if the infected surface was removed mechanically before this time had elapsed it was possible to prevent a spread of the infection. He further found that if the wound was kept open and the secretion allowed to drain out, it was also possible to keep the animal alive a longer time.

These experiments prove several points which have been observed clinically, to which I shall refer shortly.

Infection is met with in practice in a number of different forms: (1) The circumscribed, as seen in a folliculitis, a carbuncle, a furuncle, paronychia, or an acute abscess; (2) phlegmonous inflammation with suppuration; (3) progressive purulent infiltration.

If we keep these three varieties clearly in mind it will be easy to change the general principles of their treatment to suit the particular anatomical region in which they occur. It is beyond the scope of the present article to treat of erysipelas, anthrax, or any chronic form of infection, such as tuberculosis, actinomycosis, glanders, etc. To come back to our first, the circumscribed, form, the only difference between the different varieties is one of extent. A folliculitis should be treated by extracting the hair which always forms the center of such infection, and then applying some antiseptic wet dressing composed of several layers of gauze covered by guttapercha tissue or waxed paper, etc., saturated with some mild solution such as the following:

R Acidi salicylic B.....gr. xvj.
Alcoholis.....q. s. ad ℥ ij.
Teaspoonful to one-half glassful of hot water, to be used as directed.

This is nearly a Thiersch solution. It is non-irritant, can be easily applied by the patient himself, and has proven a very satisfactory mild antiseptic lotion. I renew such a wet dressing twice or even three times daily, until all evidence of beginning infection has disappeared. The shriveling of the skin caused by this solution is not a sufficient drawback to cause it to be dispensed with. Instead of this, one may employ a weak boracic solution, a ¼- to ½-per-cent solution of formaldehyde, one per-cent acetate of aluminum, 1:4000 lactate of silver lately advocated by Crédé, or alcohol used by Salzwedel. I seldom use bichloride wet dressings on account of their irritating action on the skin.

I must disgress here to advocate the use of hot wet dressings for all forms of local infection, whether circumscribed or diffuse. The gauze saturated with liquid, even though it be salt solution or distilled water, acts through capillarity to drain away the wound secretions, including the

microbes contained therein, and thus assists the tissues to overcome the infection. They have proven of such great value that I employ them as almost routine practice with excellent results.

In furuncle the infection has invaded the connective tissue of the skin and in these, if the application of either ice or repeated hot wet dressings does not cause a resolution, an incision, preferably a crucial one, in order to better pack the wound, should be made early. With the aid of a weak solution of cocaine injected around the area, the blood being prevented from carrying away the anesthetic by constriction of the limb at some higher point by an Esmarch, the operation is practically painless. This is by far preferable to freezing the tissues with ethyl chloride or injecting a Schleich solution. The incision must be large enough to extend nearly to the edge of the infected area, and if crucial the subsequent repacking of the wound is far less painful. For packing any kind of gauze with wide meshes can be employed, and the strip should be cut off at the level of the skin in order to prevent pulling it out when the dressing is renewed. The parts should previously have been carefully disinfected and shaved, and after the operation a well-padded splint should be applied to keep them at rest. Frequently elevation of the part upon a pillow, inclined-plane splint, or sling suspended from a pole at the side of the bed, is of the greatest benefit.

For a carbuncle, which is made up of many foci of infection, the treatment is practically the same. In addition to the measures above described, injection of the surrounding tissues with five percent carbolic solution will frequently check its progress.

In paronychia, which always starts in the connective tissue, if the infection passes under the nail, lifting it up, we should not hesitate to remove the same partially or wholly at once, for neglect of this has caused some severe cases of general sepsis. We should also remember the readiness with which the infection in the hands or feet invades important structures, *e. g.*, the periosteum of the phalanges (felon), the tendon sheaths, joints, and is frequently transmitted through the lymphatic circulation with remarkable rapidity to the lymph glands, which receive the lymph vessels of any particular region. This latter may occur without the usual warning in the shape of a visible lymphangitis. Not infrequently infection from the fingers may travel along these channels, as I have observed in several cases, to the subdeltoid bursa, and the shoulder-joint thus becomes involved early.

Certain other anatomical points must be kept in mind in the treatment of infected wounds in the fingers and hand. On the dorsum, the loose arrangment of the subcutaneous connective tissue presents characteristics similar to those of any other subcutaneous infection. The presence of a large number of hair follicles favors the localization of septic processes in the cutis, which lead to the formation of typical furuncles, or rarely a carbuncle. On the palmar aspect of the fingers and the hand, instead of the longitudinal and loose arrangement of the connective tissue on the dorsum, there is a dense network of short, thick fibers enclosing a number of small acini of fat. The main direction of these fibers is

from the cutis to the periosteum or to the sheath of the tendons, to which they are closely attached, Upon this depends the tendency to penetrate the bone or the tendon. Another anatomical point to be remembered is the relation of the flexor tendon sheaths. Those of the index, middle, and ring fingers represent separate and closed receptacles, which terminate at the level of the metacarpo-phalangeal joint. For a short distance the tendons have no proper sheath, and then again enter the common palmar bursa. From these we deduce the following: In an infection of the fingers, especially of the palmer aspect, make a longitudinal incision, preferably to either side of the tendon, and kept the wound open with gauze packing. If the periosteum has been invaded, incise down to it early, and it will often be possible to save a phalanx. Remember the tendency of these infections to invade tendon sheaths. If this has taken place, open the same early, remembering the above anastomoses, and especially those of the thumb and little finger.

In the second variety of infection I have mentioned above, the same general principles hold true. In this there is a rapid extension of the disease without leading to circumscribed collections of pus. These are most frequently caused by the streptococcus. This is frequently called a cellulitis, though this is a misleading term. The inflammation does not affect cells, but connective tissue, invading intermuscular septa, tendon sheaths, and fasciæ, penetrating joints or even the larger serous cavities, and frequently ending fatally, either through toxemia, from a constant absorption of toxins from the infected areas, or through septicemia or pyemia proper, from entrance of pus germs into the general circulation. The treatment should be vigorous and prompt. Small incisions are of no avail. Long incisions, parallel if necessary, should be made, exposing the entire area involved; necrotic tissue removed; tendon sheaths and bursæ widely opened. If joints had been invaded no time should be lost in draining them with drainage-tubes and gauze. If possible, the application of an Esmarch above the point of infection facilities the operation. The wound should be irrigated with strong (1:1000) bichloride solution or peroxide of hydrogen. The infected tissues should be touched with 10 per-cent zinc chloride solution, and then packed in every direction with iodoform or even plain gauze, and a dry dressing applied for a few hours, until a greater part of the parenchymatous oozing, which may be very profuse, has ceased. A splint or fenestrated cast in a compound fracture should always be used.

The value of packing the wound is proved by the above quoted experience of Friedrich. It drains away the secretions and assists Nature in her effort to combat the foe. After a few hours, wet dressings, constant immersion of the parts in some especially constructed bath filled with a mild antiseptic lotion, or constant irrigation with some form of apparatus, are desirable. The wound should be dressed once or twice daily, according to its severity, irrigated with 1:4000 bichloride (watching for symptoms of mercurial intoxication), or 1:4000 lactate of silver or with peroxide. It should be thoroughly repacked and a wet dressing reapplied. For the general condition, quinine, whiskey, strychnine in liberal doses

can be given. Streptococcic serum is undoubtedly of great value and should be given a trial in severe cases, especially if symptoms of general sepsis appear. If the case seems hopeless, early amputation, if an extremity be involved, is advisable.

The third variety of infection is the purulent edema of Pirogoff. It is an advanced stage of the preceding, and is always attended by extensive connective tissue necrosis. It has wrongly been called phlegmonous erysipelas. Large incisions extending to the fascia must be made, these connecting with each other or with smaller intervening, counter-drain openings. Either drainage-tubes or gauze drains may be used and a wet dressing applied. The remainder of the treatment is the same as for the preceding variety.

In short, our maxim in the treatment of infected wounds should be early and not too small incisions, disinfection and packing of wounds, wet dressings, and systemic treatment.—*Medicine.*

THE TREATMENT OF ECZEMA.

"It is never dangerous to cure an eczema, and always desirable to do so," says Holt. Basing his opinion upon an experience of 3,201 cases treated in private practice, Bulkley says that in over twenty-five years he cannot recall a case where harm resulted from the proper treatment of an infantile or other eczema. The truth of these statements should be accepted once for all, for it is the teaching of every man of experience who has recently written upon the subject.

Three plans of treatment have been advocated by recent writers: Local alone, constitutional alone, and local and constitutional combined. Those who advocate local treatment alone are found almost exclusively in the ranks of the dermatologists, not in those of the pediatrists. The latter believe that the disease is not simply a local disorder of the skin, but requires constitutional treatment, which includes diet, hygiene and medication.

As to diet, the food and management of the mother or wet-nurse should receive close attention. Particularly should all malt and alcoholic liquors be prohibited. Constipation in the infant should receive particular attention, and every detail of feeding should be scrutinized, it being remembered that many children begin to improve at once upon reducing the fat in the milk. This fact is not contradicted by the other fact that some young patients improve upon the administration of cod-liver oil It simply demonstrates that no routine practice can be successfully adopted in treating eczema, and indicates that every case must be studied individually and treated on its merits.

It is not within the scope of this article to discuss the details of hygienic, medicinal, and local treatment of eczema, the object being only to emphasize the fact that in young children the disease is closely associated with digestive disturbances and can be managed most successfully by a judicious combination of constitutional and local measures.

AFTER OFFICE HOURS.

It was long after office hours when the doctor dismissed the inevitable young man who had been reading up his own case in the *Household Physician*, and whose song had been like unto the wail of a lost soul. But his doubts had now been half dispelled by Budweiser's suggestive therapeutics, and the latter felt assured that hypnotism and the bromides would finally do the rest.

"It is unfortunate," said he, in reply to a remark of mine, "that education even now-a-days has so little practical value. I was reading last night one of Froude's addresses in which he says, speaking of intellectual acquirements:

"The knowledge that a man can use is the only real knowledge: the only knowledge that has life and growth in it and converts itself into practical power. The rest hangs like dust about the brain, or dries like raindrops on the stones."

Now just note what the doctor is obliged to undergo during his toilsome march upward. He must burn the midnight oil in committing to memory a thousand and one dry, disconnected facts upon which he is eventually to pass a rigid examination and by which his ability as a future practitioner is duly gauged. Most of us know, however, that a large proportion of those important things are of no earthly use to anybody, and have nothing at all to do with one's future success. The wise man, therefore, proceeds to forget them immediately and sets himself to work acquiring something useful in their place. Otherwise he is bound to be superceded by the uneducated, who happen to know how.

"But as I was saying; after getting our Latin certificates—it always makes me smile to see diplomas awarded anyway—and after joining the noble army of martyrs, we have served up to us a heterogeneous mass of books, journals and essays, all of which we are compelled to read in order to 'keep up,' but which contain many painfully scientific articles by medical enthusiasts or a narrative of the personal achievements of specialists who are advertising their wares, or the histories of cases which are too unique to be true. We won't say anything about the endless and heavy packages of circulars which describe so vividly the healing power of special drugs and which the drummer entreats us to read with the eye of faith Yes, our cross is heavy, but our craft holds the belt of Christian resignation under the trying ordeal."

"Then you place little reliance in the recent therapeutic discoveries," I remarked.

"I have faith in only what has stood the tests of time and experience. Every few years there will be a true and valuable discovery, but in the intervals we have a mass of stuff which is a grievous imposition upon a doctor's time and strength and patience. Individual inspirations as noted in our current literature, are notoriously unreliable and seldom stand investigation. There is very little which can be called new, for our

advances are on lines laid down years ago by the fathers of medicine. You remember, of course, what Emerson said:—'Every ship that comes to America got its chart from Columbus. Every novel is a debtor to Homer. Every carpenter who shaves with a fore plane borrows the genius from a forgotten inventor.' Every one who achieves prominence is expected to contribute either a new fact or a book; so, as he can't do the first, he tries to do the other thing, which is much the easier task of the two, for the text-book of to-day is apt to be little more than one of the old classics revised and brought down to date by the ambitious author."

"But some of the most important things are yet to be written," said I.

"There, now you have hit it! The books seldom tell us what we most desire to know. The usual conditions of health and disease every well educated man is more or less familiar with. We don't need any help so far as *they* are concerned. It is the strange—the unique—the enigmatical, which bothers us. Now, to whom shall we go for more light or something definite? Not to the books, for they tell us nothing, and not to the teachers, for their utterances are more obscure than those of the Delphic oracles. No, the seeker after truth must generally be content with the data which his past experience affords, and cease to look to others for a solution of his doubts and perplexities.

"Don't you have every once in a while a case the like of which you never saw before? And don't you turn over all the old trash in your library and search wildly through all the text-books from Watson to Osler, and do you ever find what you want? I guess not! And then you sit down and swear, and forthwith your thoughts wander back to the days when you valued your new diploma above gold and precious stones —when you knew it all and had no occasion to ask questions of anybody."

"I was going to write a paper for the next medical meeting on 'What the books don't tell us,' but two or three young doctors have since located in our block, so that the intellectual deficiencies of us veterans have now been fully supplied."

And even as the doctor spoke there entered one of the peripatetic medicine men who arranged artistically on his study table a row of sample bottles with accompanying therapeutic notes. After adding as peace offerings a paper weight, a blotter and a calendar, he made a memorandum in his note book and seemed desirous of saying something, but Budweiser kept right on talking in his animated way, and the visitor, after waiting in vain for an opening, finally gave it up in despair and retreated in good order.

"Did you ever reflect," asked the doctor, noting with a smile of satisfaction the effect of the remark with which he speeded the parting guest, "upon the number of people who steal a large per cent. of the doctor's working hours and pay him less than nothing for his time? These individuals either have something to sell or else they feel called upon to confide in you the history of their physical infirmities or the details of their personal affairs. Then, as a last straw, there will appear at your busiest moment, the patient who doesn't know when to go, but sits and sits

expecting you to entertain him and exhibiting a calm indifference to other people's feelings and the claims of those who are sitting on the anxious seat in your waiting room.

"What might not the physician accomplish with plenty of time at his disposal and an assurance of uninterupted labor in some special branch of science or study?"

"Yes, and what an enormous income for the one who could make them pay for the services rendered," I added.

"But that is beyond human conception," replied he. "The gratitude of the ordinary patient is something of an unknown quantity, to say nothing of the depravity of the other half. One of the early fathers once said that patients with severe diseases are more grateful for a partial than for a complete cure. He might also have said that the most brilliant and careful work on the part of the doctor is rarely known, and if, perchance, recognized, is seldom appreciated. The memory of patient is palpably short and erratic, and all of us can think of experiences in medical and surgical therapeutics, which have brought us nothing but the satisfaction of effort scientifically conceived and successful y carried out. Wyh, I treated a clergyman once——."

"She's having terrible pains, doctor," announced the breathless messenger, "and the nurse says——."

"All right!" replied the doctor, and thrusting into his coat pocket a reprint on "The Effect of Astigmatism upon Uterine Displacements," he grasped his obstetric bag and sallied forth to possible trials and future conquests.—*Medical Monthly.*

EPITOME OF CURRENT MEDICAL LITERATURE.

THERAPEUTICS.

Pyoktanin in Cancer.—A few years ago this substance was brought out prominently in the treatment of inoperable malignant growths. A number of cures were reported with the drug and, like all new and much lauded remedies, it sprung into instant popular use. The inevitable reaction soon followed, and pyoktanin had either given place to other and more recent innovations, or those disappointed in the effects obtained in the cure of malignant disease abandoned its use entirely. During the past three or four years occasional reports in medical journals confirm much in the early statements regarding the use of this drug. It has a marvellous power for penetrating tissues, and by its absorption along the lymphatics does much to hinder the extension of malignant growths. Its use has been followed by favorable results of cancer of the stomach, as well as those of the rectal and pelvic organs. In inoperable uterine and rectal cancer it should be used as an injection, or this local use may be combined with its internal administration. It has a powerful antiseptic action, and when eliminated by the urine, it renders that fluid aseptic and exercises a favorable influence along the genito-urinary tract.

Guaiacol in Epididymitis.—The frequency of this complication in specific urethritis gives any suggestion regarding the treatment considerable value. The unsatisfactory results attending the use of poultices, strapping, or local depletion are painfully apparent. J. C. Perry says that guaiacol locally applied in this disease approaches a specific. Applied along the spermatic cord and over the epididymitis, the pain quickly disappears in about thirty minutes. There is a prompt absorption of inflammatory exudate and an early return to business. He has treated about twenty cases with the drug, some of them being so severe that it was impossible for the patient to stand because of the great pain. Relief from pain was one of the most striking things in the use of the drug, and next to that a rapid absorption of exudate, so that after two or three applications the patient was able to return to business. The relief from pain actually lasted about eight hours after each application.

A mixture of guaiacol and glycerine—one part of the latter to two of the former—was employed. About forty-five minims of this mixture was painted along the course of the cord, while one-half to one dram of the mixture is painted over the inflamed epydidymitis. The application produces a slight burning sensation, but rarely causes marked discomfort. They are made twice a day, and in severe cases three times.

The Value of Thiol in Nose and Throat Practice.—Wells' favors thiol in certain diseases of the nose and throat. The agent is an artificially produced icthyol, free from the objectionable odor of the latter. It is of special service in acute pharyngitis and tonsilitis in patients of a gouty habit.

The Treatment of Gall-Stones.—W. L. Carr divides the subject into treatment during an attack of biliary colic and during the intervals; for the paroxysm a hypodermic injection of morphine, ¼ grain, with atropine, 1-150 grain, should be given at once, repeated when needed; chloroform may be administered for anæsthesia until the morphine acts. Heat to the abdomen, large draughts of hot water, and an enema for distended abdomen are recommended. After the intense pain is over calomel may be given. The treatment between attacks consists of the regulation of the diet and mode of life and administration of drugs; of these, Carr says alkaline waters and salines, chloroform, ether and turpentine may be given. In cases of impaction, surgical procedure is the only relief.

Benzine in Anesthetic Mixtures.—Wood' assets that a careful perusal of the reports of the clinical use of Schleich's new anesthetic mixture (ether, chloroform and benzine) forces him to the conclusion, in view of his own experiments on lower animals, that benzine is a dangerous component in such mixtures.

Ichthyol in Chronic Bronchitis.—It is several years since Tanneur recommended this substance as a substitute for creosote in the treatment of phthisis. The results reached by him were strikingly better than with the latter drug, there was less disturbance of digestion and a more favorable influence upon the bronchial secretions. Tanneur gave the drug in increasing doses, beginning with two or three and increasing to eight or ten grains three times daily. As the drug causes disagreeable eruptions, he gave it in keratin-coated pills, thus securing aborption from the small intestine and avoiding the local action of the drug upon the stomach. The drug has not proven strikingly efficacious in the treatment of tuberculosis, but it modifies in a marked degree the bronchial secretions, and is, therefore, particularly valuable in all forms of chronic bronchitis.

Picric Acid in the Treatment of Eczema.—Picric acid has been recommended in the treatment of burns. Naturally it would be regarded as of use in the treatment of inflammations of the skin. As early as 1896, McLennan drew attention to the value of picric acid in the treatment of inflammatory disorders of the skin. In his method the raw surface is freely painted over every morning and evening for three or four days in succession with a saturated watery solution. Recently Brousse and Radaeli have both reported very favorable results in the treatment of eczema. Observers generally agree that the excessive application of the drug does not cause toxic symptoms; that immediately after the application there is considerable smarting, which lasts for ten or fifteen minutes, but is usually not severe. Radaeli, before applying the picric acid, carefully cleanses the affected part with a solution of boric acid. The hair is clipped short and all dried secretions removed. The part is then carefully dried and a compress of cotton, wrung out of a saturated aqueous solution, is applied. Over this a sufficient amount of dry, absorbent cotton is placed to absorb the discharge. On the whole, the method seems to be an efficient and somewhat more simple one than most of the plans heretofore tried.

Terpinol in Bronchial Catarrh.—This is a colorless, oily substance, having the formula $C_{10}H_{17}OH$. It is prepared by boiling terpin with diluted mineral acids. It is insoluble in water, but dissolves readily in alcohol and ether. The dose is from three to five grains given in capsules or pills from four to six times a day. If given in capsule it is well to combine the substance with olive oil, in which case the capsules may be made fresh each day, or they may be filled by the patient. This drug is of very great value in the treatment of all forms of bronchial catarrh. It has very little effect, if any, upon the nervous system and the drug is almost entirely eliminated by the bronchial mucous membrane, It is a substance deserving of much more extended study than it has yet received, and it is doubtless destined to play an important role in therapeutics of respiratory disorders.

Orthoform in Toothache.—It is asserted that this substance immediately and completely relieves the severe pain due to inflammation of the pulp of decayed teeth. It is best applied in strong alcoholic solution upon cotton placed in the tooth cavity. Orthoform is said to be devoid of toxic properties, and for this reason it may be employed as a domestic remedy. Even when used by a physician, it will be found more satisfactory than some of the powerfully toxic substances which are employed in this condition. That orthoform has a distinctly local anæsthetic action, has been determined by Lichtwitz and Sabrazes, who have noted this effect in cancer of the larynx, and they have also employed this substance in place of cocain in throat operation. The action of the drug is comparatively slow on unbroken surfaces, and while it is distinctly analgesic, it is not a good substitute for cocain upon unbroken surface.

Quinine in Leucorrhea.—R. S. Miller, in a recent number of *The Lancet*, states that he has used muriate of quinine as a topical application in these cases for the past eight or nine years. He states that the results obtained in granular erosions of the cervix, septic endometritis, and all forms of vaginitis are most favorable. It is non-irritating and may be employed in the form of a suppository. These suppositories may contain from three to five grains of the salt and keep up a prolonged local antiseptic and astringent action, which exercises a most favorable influence upon the inflamed and congested mucous membranes.

Formaldehyde in the Treatment of Inoperable Malignant Growths.—Mitchell' has used 20 per cent. solution of formaldehyde in the treatment of inoperable cancer. The drug acts as an escharotic, producing a slough about one-fourth of an inch in depth. There is no shock and no hemorrhage, and it does not set up a diffuse inflammatory process. As the discharge is very slight as a rule, simple dressings only are required. When the slough separates, the well-defined edge of the morbid growth can be seen clearly outlined in its relation to the normal tissue. The objections to the treatment are, that the pain is considerable and the application causes considerable edema. In addition, there is considerable absorption of the drug, which causes some systemic reaction.

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EDITORIAL.

THE PREVENTION OF TUBERCULOSIS.

At the first meeting this session of the Manx Medical Society the President (Dr. Richardson) delivered an address dealing with the methods of prophylaxis of tuberculosis and its treatment by the open-air method. After referring to the necessity of arousing the public to recognize that tuberculosis is largely a preventable disease, he passed on to review briefly the recommendations of the Royal Commission on Tuberculosis. The regulations in force in Denmark were next referred to, and it was stated that in that country, in consequence of a law passed in 1893, all cattles are tested with tuberculin; those which do not re-act are kept separate in disinfected stalls and tested every six months with tuberculin. State compensation is given to the owners of cows affected with mammary tuberculosis, which are slaughtered according to law. The necessity of some such stringent regulations in this country was emphasized by the fact that in the case of the milk supplied to Manchester, of 93 samples taken at random at the railway stations, 18 were found to be tuberculous; and, considering the large amount of milk consumed by young children, this was a question of the utmost importance in the prophylaxis of tuberculosis, as an additional means of combating tuberculosis, Dr. Richardson referred to the importance of strict attention to sanitation, efficient drainage of the land, avoidance of overcrowding, overwork, defective ventilation, etc.; also the erection of sanatoria, some for treatment of early cases, and others for refuges for those dying of tuberculosis.

He then proceeded to describe the open-air treatment for phthisis in different countries. One of the first sanatoria built for this line of treatment was in Silesia, and dated back to 1854. Several had since

been constructed, and they were mostly at a considerable elevation, away from centres of population where the air was freer from microbes and other impurities. The principles of treatment at these institutions consisted in keeping the patients during the day time in the open air protected from the weather; and at night keeping the bed-room windows open. Advanced cases were kept in bed day and night with the freest possible ventilation. The patients were well fed and their linen and utensils all disinfected. Patients rapidly became hardened to exposure, and a gain of two or three pounds in weight weekly was frequently met with. Similar sanatoria were being established in Great Britain.—*British Medical Journal.*

At a recent meeting of Liverpool Medical Institution, Dr. Nathan Raw read a paper on the open-air treatment of tuberculosis in sanatoria. He alluded to the general prevalence and high mortality from tuberculous disease, which, although much diminished in recent years by improved sanitation and food inspection, still rank very high. He mentioned the poor results of treatment in general hospitals, and considered it unfair to both the patient and the other inmates of a general ward that he should be treated therein. He combated the "inheritance" of phthisis, and insisted on the infectivity of the disease. He concluded by considering it the duty of the Legislature to deal thoroughly with the question of cure by sanatoria, and urged boards of Guardians to establish sanatoria, and gave details of site and architecture of such buildings

The President remarked that while, by the tables shown, the mortality from tuberculous disease in adults had enormously decreased. Sir Richard Thorne had pointed out that the mortality from this cause under one year of age had increased, due, he thought, to the greater use of cow's milk at that age. A pure milk supply became a necessity. Dr. Hope had shown that 13 per cent. of country milk brought into Liverpool was tuberculous, and only 4 per cent. from town dairies. It was interesting to note that heating the milk to 195°F. was sufficient to sterilize the milk.

Dr. Buchanan considered it necessary to the treatment of tubercule to remove the patient to an atmosphere from which the tubercle bacillus and other organisms were absent, and, if possible, to one in which they could not live; at the same to increase the resistance of the host. He advocated sanatoria for collective cases, but urged that every effort must be made to make a man's dwelling house his sanatorium. Fifty years ago Professor Virchow said "It is the duty of mankind to overcome tuberculosis as scurvy has been overcome."

Dr. Hope emphasised the close identity between measures which had been successful in the prevention of tuberculosis, and measures which promised to be successful in treatment. He did not consider that under existing circumstances any useful purpose would be served by scheduling tuberculosis as one of the notifiable infectious diseases, but there were no doubt cases in which the medical officer of health might with advantage supplement the advice and action of the medical adviser, and it was desirable that in every case thorough disinfection of the house, etc., should take place. The great decline in the mortality from tuberculous disease in Liverpool was in the main owing to sanitary measures, having, as one principal object, improvements in ventilation. These improvements, carefully thought out and slowly elaborated, had reduced the mortality per 100,000 from all forms of tuberculosis from 430 to 1866 to 292 in 1896; the rate above five years of age from phthsis having fallen from 363 to 233, and below five years of age from tabes mesenterica, etc. from 637 to 497 in the period alluded to.

Dr. Caton, who had visited various foreign sanitoria, expressed regret that hitherto Great Britain should have lagged behind continental nations in this matter. In proximity to every great centre of population sanitoria ought to be established by municipalities, county councils, or boards of guardians. The expenditure involved would in the end prove an economy as well as delivering the population from the scourge of tubercule. General hospitals ought not to admit cases of phthisis. Dr. Caton urged the desirability of making the infective nature of the disease widely known.

Dr. A. Davidson pointed out that the principle of open-air treatment in phthisis was not new, and quoted from Dr. Hughes Bennet's book published in 1853, where it was considered of supreme importance and where he deprecated the sending of consumptives to warm climates abroad.

Dr. Abram drew attention to what, in his opinion, was generally overlooked—namely, that the repute of the open-air treatment was in the main based upon the results obtained at the "high" sanatoria. He counselled moderation in urging the virtues of low-lying sanatoria, lest there should come a reaction in the public mind with regard to the provisions of pure air for tuberculous patients.—*British Medical Journal.*

EDITORIAL NOTES.

IN our October number (page 7) we called attention to the published results of certain experiments, in Holland, in the course of training for physical contests, and the trials made during the German army manoeuvres last autumn would seem to bear out the statements referred to. These investigations were doubtless suggested by the researches of the French savant, M. Chauveau. Soon after Claude Bernard had discovered in the liver a special sugar, which he called glycogen, M. Chauveau demonstrated that this substance is present not only in the liver but in the blood. M. Chauveau communicated the result of his experiments to the French Academy of Science in March last year, calling special attention to the superior nutritive value of sugar in comparison with that of fat..

OUR knowledge of the nutritive and tonic value of sugar has now been transferred from a theoretical to a practical domain. During the German army manoeuvres, the medical officers selected 10 men, chosen from among the least vigorous, in each company, as subjects for experiment, to whom a given quantity of sugar was supplied daily ; another 10 being selected, who were strictly confined to service rations. The amount of sugar supplied daily to the men was gradually increased, and it was found that their weight increased proportionately more than that of those not so supplied, while the men themselves were in better health and more vigorous than before. It was also noticed that the men who were supplied with sugar suffered less than others from thirst; they were more alert than their comrades, and bore fatigue better.

THE glorification of sugar seems to have added an additional impetus to vegetarianism. Dr. Strasser, in the *Wiener Medical Presse*, has recently given the subject his somewhat enthusiastic support. Nourishment by means of vegetables, he claims, produces but few toxins in the intestinal tract, and tends to cause the disappearance of abdominal and other plethora. Under a vegetarian regimen the urates become less abundant and the urine less acid. He strongly advises a vegetarian diet whenever there is an indication of gastro-intestinal auto-intoxication, and recommends it to the obese, to the plethoric, to the constipated, and to those suffering from arthritism and nervous diseases. In cases of nervous dyspepsia, complicated with intestinal atony, especially when coprostatis is present, the addition of the grape cure to a vegetarian diet gives excellent results. Dr. Strasser's views are doubtless valuable, but

certain of the disadvantages of vegetarianism have to be considered. The principal of these is the volume and relative insufficience of nutrition in most vegetable foods. The length of time they remain in the intestinal canal is generally too short for complete absortion, and experiments show that the fæces of persons fed with vegetable foods generally contain about 40 per cent. of albuminoids which have not been absorbed. It is true that this could be remedied to a a great extent, but the volume of vegetable food required has the effect of overloading the stomach, which results in an insufficient movement of that organ and predisposes to gasterectasis.

FRENCH scientists have recently asserted that malic acid is an antidote to the *bacillus typhosis*, and it is, therefore, claimed that among the numerous virtues which cider is now supposed to possess, is that of being a natural remedy of great value in the treatment of typhoid fever, owing to the large percentage of malic acid it contains In Brittany, where cider is largely made for export, the peasants use, in their cider making, water from pools near their farm-houses, believing that by so doing they promote fermentation, and the marked absence of typhoid fever among the Breton peasantry is chiefly due, it is claimed, to their large consumption of cider.

LIEUTENANT-COLONEL E. LAWRIE, I.M.S., Resident Surgeon at Hyderabad, has published an interesting report of experiments made with a view to ascertaining the manner in which the plague spreads amongst the inhabitants of an infected district. The report also contains a brief record of investigations, carried out in the laboratory of the Hyderabad Medical School, into the bacteriology of the virus found in the floor dust and scrapings of infected houses. Lieut-Col. Lawrie remarks upon the practical value of the knowledge that the plague virus lodges in and is disseminated from the floors of houses, as follows: "(1) infection of plague can be traced by means of the microscope with as much certainty as if it were visible to the naked eye; (2) the value of disinfection can be measured by the same manner; (3) the one disinfectant by which uniform results have been obtained is fire; (4) by means of the microscope, fire, and boiling, plague can be stamped out with nearly mathematical certainty; (5) floors and clothing contain the food by which the plague microbe is kept alive, therefore disinfection by fire an boiling destroys the food supply of the infection."

THE *Times of India* publishes an extraordinary account of the plague outbreak in Samarkand. The outbreak occurred at the village of Anzop, which is situated on an almost inaccessible mountain craig 14,000 feet

high. When the Russian doctors arrived they found 380 cases of plague among the 600 persons of which the population consisted. All but three of these cases terminated fatally. Dr. Lieven, one of the members of the party, had brought from Bombay a supply of Dr. Haffkine's prophylactic serum, and with this the survivors were inoculated. After this treatment there were no new attacks, and the last death occurred four days after Dr. Lieven's arrival. The result is regarded as a triumph for the Haffkine method of treatment. The disease was conveyed to Anzop by a wandering fakir.

WE have all heard of the victims of alcoholism who drink ether, methylated spirits, eau de Cologne and other intoxicants, but petrolism, the new vice alleged to exist in Paris, is verily a grim novelty without parallel. This terrible habit, it is said, has already made alarming progress in Paris, where it has existed for a considerable time. The intoxication of the *petroliques*, as the unfortunate people addicted to petroleum drinking are described, is of a melancholy nature and unlike any other form of drunkenness. The drink does not appear to exhilarate, rather the reverse, and the *petroliques* are rarely quarrelsome or pugnacious. They sleep calmly, and even their general health is not, seemingly, as rapidly undermined as it would be by the alcoholic beverages in common use, but the gravest organic changes are produced.

THE sensational announcement that Mr. Nikola Tesla, the well-known American electrician, has discovered a method of destroying the bacilli of tuberculosis, and in fact the morbific microorganisms of all other diseases, by means of electricity, has aroused considerable discussion in the lay press and in scientific circles. Mr. Tesla claims to have discovered a means of safely applying a rapidly alternating electric current of high voltage to the human body thereby destroying the bacilli of all diseases. It is reported that his theory is that each cell of the human organism is a minute electrical battery, and that a modified but powerful current can be made to stimulate the action of each cell, and by increasing oxidation destroy any disease germs present in the body. The idea in itself is not altogether new, various scientists having undertaken numerous experiments on animals with a view to ascertaining what effect, if any, high speed electrical oscillations have upon living organisms. The effect upon the human body of rapidly alternating electrical currents have been studied for some time past. Mr. Tesla himself demonstrated some of the most curious of their phenomena on the occasion of his last visit to England. Though it has been established that rapidly alternating currents of high voltage can be passed through living persons with causing

inconvenience, almost without being felt, and without injuring the tissues, it has not been proved that disease germs can be destroyed in this manner without injury to the subject. The difficulty seems to be that an electrical current fatal to disease germs would also, in all probability, be fatal to other beneficient and necessary, bacteria within the human body.

THE old question whether or no death instantaneously follows decapitation has recently been revived in Paris. Dr. Cinel maintains that the large blood-vessels only of the neck are at once emptied by decapitation, that there is hardly any flow of blood from the smaller vessels supplying the brain, which remains intact, nourishing itself from the blood retained by the air pressure, and that when the blood remaining in the head at the moment of separation is exhausted, there commences a state not of death but inertia. Dr. Cinel estimates that the brain finds nourishment in the residual blood for nearly an hour after decapitation, and that the period of inertia lasts for about two hours. He says that the reason a bodiless head does not indicate, by muscular movements, the horrors of its situation is because the nerves, which serve for the transmission of impulses from the brain to the muscles, are paralysed, but that the nerves of hearing, smell, and sight frequently remain capable of performing their respective functions. He believes that the guillotine does not cause instant death, and that consciousness may for a brief period exist after the head has been severed from the body. Such views may be useful to the sensational novelists, but they are not likely to be taken seriously by scientists.

PROFESSOR VON ESMARCH, the well-known German surgeon, has written to the *Deutsche Revue*, suggesting that the coming Peace Conference should arrange for the instruction of all soldiers in first aid to the injured. The rank and file of the army should, he says, be equipped with bandages and other necessary light portable surgical appliances, and taught the full significance of the Geneva convention. Professor von Esmarch advocates this measure especially in view of the fact that the wounded in future wars will inevitably be so immensely numerous, owing to the use of quick-firing weapons, as to baffle the efforts of surgeons to help them. He also advocates that the use of small calibre bullets should be debarred unless they have hard points so as to avoid the terrible effect of the spreading bullet.

IN a recent paper read before the Rontgen Society Surg. Major Battersby related his experiences in the use of X-rays in the last Soudan campaign. After the battle of Oomdurman 121 British wounded were taken to the base hospital. In twenty-one cases the bullet could not be

found, and in twenty of these cases an accurate diagnosis was obtained by the use of the rays. The electric current was obtained from E.P.S. cells charged by a hand dynamo, and much ingenuity was displayed in utilising the back wheel of a tandem bicycle, stripped of its tyre and geared to the dynamo, for driving power. The apparatus consisted of a 10-inch and a 6-inch coil. The former had the advantage in portability, in so far as it was constructed in two separate sections which admitted of its being readily joined together. Eight separate E.P.S. cells, 4 Crookes' tubes, and a screen. The screen work, however, was found to be somewhat unsatisfactory on account of the difficulty in obtaining a sufficiently dark compartment. Specially constructed boxes were employed for carrying the coils, and these were covered with felt which was kept constantly wet and in this way a low temperature maintained from rapid evaporation, notwithstanding that ranges of temperature of 100 to 120° F. were frequently experienced. The screen was covered with celluloid as a preventitive against dust; dust-storms being one of the chief climatic drawbacks experienced during the campaign. In photography glass plates were chiefly used, and those presenting the thinnest films seems best to stand the heat. Development was mostly carried out in the very early morning hours, but the temperature of the water at all times seriously interfered with the process.—*Review of Review.*

ONTARIO MEDICAL LIBRARY ASSOCIATION.

In our March issue we gave our readers a list of books—the first annual instalment for the "Bovell Library," purchased through the generosity of our old friend William Osler.

The list will repay a glance over it again, containing as it does many of the latest works on medical subjects proper.

In order to enable the Association to keep up with the times, an "Endowment Fund" was established some months ago for the prompt purchase of the best new publications as issued. As the interest alone can be used, and as the fund is only in its infancy, and therefore very little ready interest as yet available, it is hoped that a generous response will be made to this fund by many of the profession who will not miss a small contribution in so good a cause.

Many may not feel justified for one reason or another, in giving to this fund, but we are all able to help along the library in another way, and that is by sending it all the old journals about the office. These can always be utilized in "exchange" with other Libraries. All that is necessary is to pack them in a box, address it to the Ontario Medical Library, corner Bay and Richmond Streets, and freight will be paid on arrival, and an acknowledgement made through this journal.

Books of any date will also be gladly received. They are of some use to the Library, the great majority of old issues are of no use whatever to the regular practitioner, except to remind him that he is "getting on in life."

Therefore look over the old book-cases, cupboards, store-rooms and out of the way corners, and send on all you do not need, and moreover, never look into from one year's end to another. You will earn the gratitude of your better-half at every house-cleaning, and at the same time the thanks of the Library.

A cordial invation is extended to the Members of the Ontario Medical Association to visit and make use of the Library in any and every way during the meeting this month.

TRINITY MEDICAL ALUMNI ASSOCIATION.

The seventh annual general meeting of this Association was held in the theatre of the Normal School building on the 31st May.

Dr. J. M. Shaw, of Keene, vice-president of the Association for Eastern Ontario, occupied the chair.

The following were elected members of the Association: Drs. Bradley, Farewell, Ashton, Graham, Hough; Drs. Carmichael, Gibson and Young, Peterboro'; and Dr. C. A. Page, Toronto.

In the unavoidable absence of the secretary, Dr. George Elliott, Dr. Wishart acted as secretary, and read letters regretting inability to attend from the president, Dr. Henry Howitt, Guelph, and Dr. J. C. Mitchell, a past president, Enniskillen; also telegrams from Dr. Frank Hartley, New York, who was expected to address the meeting on surgery, and Dr. Ernest Hall, Victoria, B.C., the winner of the gold medal in the annual competition.

The auditor, Dr. Norman Anderson, then read the treasurer's report which showed a balance in favor of the treasurer of $6.30.

Dr. Wishart reported verbally for the secretary and the executive committee.

Election of officers for the current year resulted as follows:

President, Dr. J. A. Temple, Toronto.

Vice-president for Toronto, Surgeon-Major Nattrass.

Graduate's representative, Dr. A. Y. Scott.

Secretary and Treasurer, Dr. George Elliott, 129 John Street, Toronto.

It was then moved by Dr. Scott, and seconded by Dr. Pepler, that the election of vice-presidents for Western and Eastern Ontario and the other provinces, be left in the hands of the committee.

Dr. Wishart read Dr. Earnest Hall's paper which had been awarded first place in the annual gold medal competition, the subject of the paper being "Pelvic Disease in the Female Insane."

Drs. Pepler, Milner and Fotheringham ably discussed the paper.

Dr. J. T. Fotheringham read a paper on Hyoscine, relating the history of the use of the drug in six cases

In discussing the paper, Dr. C. A. Temple spoke of the use of the drug in post-operative restlessness. Its irritation caused its hypodermic use to be abandoned. Adjournment to luncheon.

2.30 p.m.

Cystitis.—Dr. E. C. Dudley, Chicago, read a very interesting and able paper on Cystitis.

Drs. J. A. Temple, J. W. S. McCullough (Alliston), N. A. Powell, Elias Clouse, C. A. Temple and G. P. Sylvester, participated in the discussion of the paper. Dr. Dudley replied.

Adjournment for convocation at Trinity Medical College. In the evening about 75 sat down to a lovely dinner at the National Club. Addresses were made by Dr. Dudley, of Chicago, Dr. Gilmour, Dr. McCullough, Dr. Geikie, Dr. Powell, Dr. Sheard, Dr. Temple, and songs by Dr. G. Gordon, Dr. Parsons and Dr. Wilford. On the whole a most enjoyable evening was spent. The meeting of the Alumni is increasing yearly, and we fervently hope it will always continue and increase from year to year. Many of the papers read will appear in LANCET'S future issues.

TRINITY MEDICAL COLLEGE ANNUAL COMMENCEMENT.

Tuesday, May 30th, 1899, 4 p.m., at the College.

ORDER OF PROCEEDINGS—OPENING EXERCISES—AWARDING OF HONORS WON DURING THE LAST SESSION (1898-9.)

FIRST YEAR.

I.—Certificates of Honor for First Year's Work.

Candidates who have obtained 75 per cent. and upwards.—Thompson, J. J.; McCauley, W. A.; Irving, R. W.; Allin, E.; Allwood, G. S.; Williams, W. T.; Burns, J. D.; McDougall, C. H.; Hutton, H. B.

70 per cent. and upwards.—1st Class Honors.—Clancy, R. W.; Thomson, J.; Morison, J. R.; Blake, M. R.; Grant, C. C.; Service, H. E.

60 per cent. and upwards.—2nd class honors.—O'Neill, J. H.; Henderson, J. E. C.; Seymour, T. F.; Cook, R. A. M.; Ritchie, F. A.; Boyce, W. B.; Becker, C. W.; Waugh, R.; Torrington, H. M.; Latta, E. E.; Brandon, E.

Passed.—Anderson, A. H.; Harris, W. J.; Imrie, G. T.; Pritchard, L. S.; Carter, J. R. C.; Hansford, W. J.; Stirrett, A. P.; Parker, H. J.; Smith, W. A.; Stenberg, O.; Henderson, James; Campbell, T. C.; Barnes, H. C.; Sawdon, J. E.; Crawford, A. H., B.A.; Thomas, R. A., passed in Anatomy, Physiology and Histology, and Practical Anatomy. Ireland, Guy O'Neil, passed in Physiology and Histology, Materia Medica and Pharmacy, and Practical Anatomy.—He took his first year's Chemistry Examination in his Arts Course. Windell, H. C., passed in Anatomy, Physiology and Histology, Chemistry and Chemical Physics, and Practical Anatomy.

Standing of Candidates in the Various Branches of the First Year's Examination.

Descriptive Anatomy.—75 per cent. and upwards.—Burns, J. D.; O'Neil, J. H.; Hutton, H. B.; Thomson, J. J.; Allin, E.; Irving, R. W.; Cook, R. A. M.; McCauley, Wm. A.; Ritchie, F. A.; Anderson, A. H.; Allwood, G. S.; Waugh, R.; Windel, H. C.; Service, H. E.; Clancy, R. W.; McDougall, C. H.; Boyce, W. B.

70 per cent. and upwards.—Henderson, J. E. C.; Blake, M. R.

60 per cent. and upwards.—Torrington, H. M.; Thomson, J.; Williams, W. T.; Carter, J. R. C.; Morison, J. R.; Campbell, T. C.; Pritchard, L. S.; Latta, E. E.; Harris, W. J.

Passed.—Brandon, E.; Becker, C. W.; Thomas, R. A.; Imrie, G. T.; Smith, W. A.; Grant, C C.; Henderson, J.; Barnes, H. C.; Parker, H. J.; Ferguson, J. A.; Seymour, T. F.; Stenberg, Oscar; Milbee, R. S.; McKay, H.; Stirrett, A. P.; Hansford, W J.

Practical Anatomy.—75 per cent. and upwards.—Thompson, J. J.; McCauley, W. A.; Seymour, T. T.; Grant, C. C.; Morison, J. R.; Boyce, W. B.; Clancy, R W.; Irving, R. W.; Windel, H. C.; Anderson, A. H.; Hutton, H. B.; Williams, W. T.; Blake, M. R.; Becker, C. W.; Harris, W. J.; Henderson, J. E. C.; Ritchie, F. A.; Allin, E.; Thomson, J.; Allwood, G. S.; Cook, R A. M.; Henderson, J.; Brandon, E.; Campbell, T. C.; McDougall, C. H.; O'Neill, J. H.; Service, H. E.; Stenberg, O.; Torrington, H. M.; Latta, E. E.; Waugh, R; Imrie, G. T.; Pritchard, L. S.; Smith, W. A.; Thomas, R. A.; Carter, J. R. C.; Mackay, H.

70 per cent. and upwards.—Hansford, W. J.; Parker, H. J.; Milbee, R. S.

60 per cent.—Ireland, G. O'Neil.

Physiology and Histology.—75 per cent. and upwards.—Irving, Robt. W.; Allwood, G. S.; McCauley, W. A.; McDougall, C. H.; Williams, W. T.; Thomson, J. J.; Grant, C. C.

70 per cent. and upwards.—Hutton, H. B.; Allin, E.; Clancy, R. W.; Blake, M. R.

60 per cent. and upwards.—Burns, J. D.; Latta, E. E.; Service, H. E.; Thomas, R. A.; Brandon, E.; Windel, H. C.; Stirrett, A. P.; Seymour, T. F.; Thomson, J.; Torrington, H. M.; Morison, J. R.; Anderson, A. H.; Harris, W. J.; Ritchie, F. A.; Campbell, T. C.

Passed.—Becker, C. W.; Waugh, R.; Hansford, W. J.; Cook, R. A. M.; O'Neil, J. H.; Pritchard, L S.; Boyce, W. B.; Stenberg, Oscar; Henderson, J. E. C.; McKay, H.; Imrie, G. T.; Henderson, J.; Smith, W. A.; Ireland, Guy O'Neil; Milbee, R. S.

Materia Medica and Pharmacy.—75 per cent. and upwards.—Thomson, J. J.; McCauley, W. A.; Hutton, H. B.; Williams, W. T.; Allwood, G. S.; Allin, E.; Becker, C. W.

70 per cent. and upwards.—Service, H. E.; Grant, C. C.; Thomson, J.

60 per cent. and upwards.—Burns, J. D.; Clancy, R. W.; McDougall, C. H.; Blake M. R.; Ritchie, F. A.; O'Neill, J. H.; Morison, J. R.; Seymour, T. F.; Cook, R. A. M.

Passed.—Smith, W. A.; Irving, R. W.; Henderson, J. E. C.; Waugh, R.; Latta, E. E.; Imrie, G. T.; Brandon, E.; McKay, J. C.; Barnes, H. C.; Carter, J. R. C.; Campbell, T. C.; Pritchard, L. S.; Parker, H. J.; Hansford, W. J.; Anderson, A. H.; Torrington, H. M.; Ireland, G. O.

Chemistry General and Chemical Physics.—75 per cent. and upwards. —Allin, E.; Irving, Robt. W.; Thomson, J. J.; Morison, J. R; McDougall, C. H.; Henderson, J. E. C.; Thomson, J.

60 per cent. and upwards.—Williams, W. T.; McCauley, W. A.; Burns, J. D.; Clancy, R. W.; Allwood, G. S.; Seymour, T. F.; Blake, M. R.; Boyce, W. B.

Passed.—Harris, W. J.; Imrie, G. T.; Brandon, E.; Waugh, R.; O'Neil, J. H.; Hansford, W. J.; Service, H. E.; Becker, C. W.; Latta, E. E.; Cook, R. A. M.; Hutton, H. B.; Henderson, J. E. C.; Pritchard, L. S.; Barnes, H. C.; Milbee, R. S.

PRIMARY EXAMINATION.

The following students of Trinity Medical College passed the Primary Examination (May, 1899) at Trinity University:—

II.—Medals—Certificates of Honor for Standing in the Primary Branches.

First Trinity University Silver Medal and Certificate of Honor.—Marshall, W. H.

Second Trinity University Silver Medal and Certificate of Honor.—Ferguson, F. H.

Certificates of Honor, 75 per cent. and upwards.—Marshall, W. H.; Ferguson, F. H.; Landesborough, D. R.; Parsons, R.; Lusk, C. P.; Kyles, R. N.; Smeltzer, W. T.; Durnin, C.; Harrington, R.; McCallum, C.

70 per cent. and upwards, 1st Class Honors.—Drury, J. E.; Coles, R. W.; Watson, A.; Brown, W. T.; Lowry, W. H.; Coleridge, J. B.; Lyness, J. D.; Ranney, A. E.

60 per cent. and upwards, 2nd Class Honors.—Elliott, C. R.; Oswald, J. McD.; Turnbull, R.; Stainer, F. T.; McCormick, J. M.; Levi, C. I.; Herod, J.; Ferguson, N. H.; Buell, J. B.; Haist, O. W.; Rice, W. H.; Hoops, G. B.

Passed.—Adams, T.; Allison, T. W.; Appelbe, W.; Cantelon, A. E.; Edwards, F. A.; Elliott, J. T.; Foster, J. H. A.; Frankland, A. H.; Johnston, S.; Ross, H. R. T.; Rundle, H. P.; Stirrett, A. P.; Thomson, J. R.; Sinclair, J. M.; Allen, T. B.; Hassard, H. J.; McLaren, R. T.; Service C. W.

Conditioned in Practical Anatomy.—Becker, C. W.

Conditioned in Chemistry, Practical Chemistry and Descriptive Anatomy.—Irving, L. E. W.

Conditioned in Chemistry and Practical Chemistry.—Kyle, W. H. M.

Conditioned in Anatomy, Descriptive, and Histology.—McDonald, W. J.

Conditioned in Materia Medica, Anatomy Descriptive, and Histology.—Malcolmson, A. C.

Conditioned in Materia Medica and Chemistry.—Thompson, R. C.

Conditioned in Physiology, Materia Medica, Chemistry and Practical Chemistry.—Waters, J. McM.

Conditioned in Materia Medica.—Wright, A. F.

Conditioned in Chemistry and Practical Chemistry.—McIntosh, W. A.

Conditioned in Practical Chemistry, Practical Anatomy, Descriptive Anatomy, and Histology.—Pierson, C. M.

Third Year's Examination.

The following passed the Third Year's Examination and their names are alphabetically arranged:—

Addy, T. A.; Adam, John Geikie; Bovyer, N. R.; Brand, C. W.; Boynton, W. J.; Boyd, Ezekiel A.; Baker, Ervin; Bell, David; Chapple, James; Coke, Chauncey E.; Carscadden, R. H.; Drinnan, Angus A.; Farrell, A. R.; Fitzgerald, J. Walter; Graham, Wm. Alex.: Hutton, Thos. J.; Henry, A. S.; Jamieson, Geo.; La Fontaine, E. W.; Livingstone, D. R.; McGillivray, D. E.; McClintock, Joseph A.; Marks, Alfred Leighton; McDonald, E. Oscar; Marlow, Fred. Wm.; McPhee, Duncan; McWillie, J.; McColgan, Adam; Newsome, J. A.; Prust, T. H.; Palmer, S. M.; Rawlinson, E. Goodwin; Rennie, Wm. H.; Ryerson, Edward Stanley; Ross, H P.; Softley, H.; Trebilcock, F. C.; Walker, J. J.

Irving, L. E. W., and Jacob, N. F., passed in Medicine, Surgery and Midwifery of the Third Year. King, R. L., passed in Medicine, Surgery and Pathology of the Third Year.

Perry, A. R., passes in Medicine, Surgery and Pathology of the Third Year. Hutcheson, H. H.; Davey, T. N., Robertson, Wm., and Farrel, S. J., pass in Medicine and Surgery of the Third Year. Aull, E., and Sinclair, J. M., pass in Medicine and Pathology of the Third Year. Schilistra, A. J., passes in Surgery and Pathology of the Third Year. Watson, C. E., passes in Medicine of the Third Year.

FINAL ("FELLOWSHIP DEGREE").

IV.—Certificates of Honor for Standing in the Entire Final Examination of the College.

Candidates who obtained 75 per cent. and upwards.—Eagleson, Samuel; Hazelwood, B. J.; Kerr, W. A.; Wrinch, H. C.; Marshall, H. W.; Johnston, H. G.; Stanton, A. T.

Candidates with 1st Class Honors.—70 per cent. and upwards.—Hotham, A. W.; Langley, D. E.

Candidates with 2nd Class Honors.—60 per cent. and upwards.—Schmidt, G. A.; McGibbon, G. C., and Simpson, W. O., equal. Collison, W. G.; Lavine, S. and Barrie, H. G., equal. Moore, J.; Weir, E. G.; Smith, H. R.; Vankleek, P. D.; Broad, R. S.; McMahon, J. J.; Peers, R. A.

Passed. Doherty, C. E.; Gesner, G. B.; Baker, E.; Scully, A. P.; Purvis, E. H.; McRobbie, D. G.; Wright, N. E. L.; Palmer, R. J.; McLaren, G. H.; Caldwell, J. M.; Hutton, T. J.; Carter, R. M.; Knight, J. A.; Coulter, L. McD.; Hutchinson, G. O.; Foote, S. H.; McLennan, E. J.

Coke, C. E., passed in Medicine, Surgery, Medical Jurisprudence, Applied Anatomy and Sanitary Science. King, John W. DeC., passed in Medicine, Midwifery, Surgery, Applied Anatomy and Pathology. McKinnon, A. A., passed in Medicine, Midwifery and Surgery. McLennan, E. J., passed in Medicine, Surgery, Midwifery, Medical Jurisprudence, Applied Anatomy and Sanitary Science. Peers, R. A., passed in Medicine, Midwifery, Surgery, Medical Jurisprudence and Sanitary Science. Wilson, D. C., passed in Medicine, Midwifery, Surgery, Medical Jnrisprudence and Applied Anatomy.

Standing in the Several Branches of the Final Examination.

Medicine.—75 per cent. and upwards.—Eagleson, Samuel; Hazlewood, B. J.; Kerr, W. A.; Johnston, H. G.; Langley, D. E.; Stanton, A. T.; Marshall, H W.

70 per cent. and upwards.—Schmidt, G. A.; Hotham, A. W.; McGillivray, D.; Collison, W. G.; Lavine, S.

60 per cent. and upwards.—Wrinch. H. C.; Vankleek, P. D.; Scully A. P.; Barrie, H. C.; Peers, R. A.; Wright, N. E. L.; Weir, E. G.; Simpson, W. O.; McGibbon, G. C.; Gesner, G. B.; Moore, J.; Purvis, E. H.; Coulter, L. McD.; Knight, J. A.; Carter, R. M.; Broad, R. S.; Hutton, T. J.

Passed.—Caldwell, J. M.; Palmer, R. J.; Baker, E.; McRobbie, D. G.; McLaren, G. H.; Smith, H. R.; Doherty, C. E.; Coke, C. E.; Hutchinson, G. O.; McKinnon, A. A.; Wilson, D. C.

Midwifery and Diseases of Women and Children.—75 per cent. and upwards.—Eagleson, S.; Hazlewood, B. J.; Kerr, W. A.

70 per cent. and upwards.—Marshall, H. W.; Hotham, A. W.; Langley, D. E.

60 per cent. and upwards.—Purvis, E. H.; Wrinch, H. C.; Barrie, H. C.; Johnston, H. G.; Collison, W. G.; Schmidt, G. A.; Stanton, A. T., Simpson, W. O.; Peers, R. A.; McMahon, J. J.; Vankleek, P. D.; McGillivray, D. E.; Wright, N. E. L.; McLaren, G. H.; Scully, A. P.; Smith, H. R.; Lavine, S.; Weir, E. G.; Knight, J. A.; Palmer, R. J.

Passed.—McGibbon, G. C.; Gesner, G. B.; Carter, R. M.; Baker, E.; Coulter, L. McD.; Doherty, C. E.; Hutton, T. J.; Caldwell, J. M.; McRobbie, D. G.; Moore, J.; McLennan, E. J.; McKinnon, A. A.; Broad, R. S.

Surgery.—75 per cent. and upwards.—Kerr, W. A.; Johnston, H. G.; Baker, E.; Hazlewood, B. J.; Broad, R. S.; Stanton, A. T.; Simpson, W. O.; Langley, D. E.; Wrinch, H. C.; Hotham, A. W; Vankleek, P. D.; Lavine, S.; McGibbon, G. C.; Collison, W. G.; Eagleson, S.; Weir, E. G.,

70 per cent and upwards.—Marshall, H. W.; Doherty, C. E.; Moore, J.; Smith, H. R.; Scully, A. P.

60 per cent. and upwards.—McRobbie, D. G.; Foote, S. A.; Barrie, H. C.; McGillivray, D.; Wright, N. E. L.; Gesner, G. B.; Purvis, E. H.; Schmidt, E. A.; McLaren, G. H.; Palmer, R. J.; Coulter, L. McD.; Caldwell, J. M.; King, J. W. DeC,; Hutton, T. J.

Passed.—Hutchinson, G. O.; McMahon, J. J.; Wilson, D. C.; McLennan, E. J.; Coke, C. E.; McKinnon, A. A.

Applied Anatomy.—75 per cent. and upwards.—Hazlewood, B. J.; Eagleson, S.; Langley, D. E.; Wrinch, H. C.; Simpson, W. O.; Smith, H. R; Stanton, A. T.; Johnston, H. G.; Schmidt, E. A.; Lavine, S.; Purvis, E. H.; Marshall, H. W.; Weir, E. G.; McRobbie, D. G.

70 per cent. and upwards.—Moore, J.; Collison, W. G.; Caldwell, J. M.; McLaren, G. H.

60 per cent. and upwards.—Hotham, A. W.; McGillivray, D.; Palmer, R. J.; Wright, N. E. L.; Vankleek, P. D.; Scully, A. P.; Baker, E.

Passed.—Doherty, C. E.; Knight, J. A.; Barrie, H. C.; Hutton. T. J.; Wilson, D. C.; McMahon, J. J.; Foote, S. A.

Pathology.—75 per cent. and upwards.—Eagleson, S.; Hazlewood, B. J.: Peers, R. A.; Kerr, W. A.; Wrinch, H. C.; McLennan, E. J.

70 per cent. and upwards.—Marshall, H. W.

60 per cent. and upwards.—Hotham, A. W.; Moore, J.; McGillivray, D.; Collison, W. G.; Johnston, H. G.; Schmidt, G. A.; McGibbon, G. C.; Stanton, A. T.

Passed.—Vankleek, P. D.; Smith, R. H.; Barrie, H. C.; Gesner, G. B.; Doherty, C. E.; Hutchinson, G. O.; Langley, D. E.; Weir, E. G.; Simpson, W. O.; McMahon, J. J.; Lavine, S.; Palmer, R. J.; Broad, R. S.; Wright, N. E. L.; McLennan, E. J.; Caldwell, J. M.; McLaren, G. H.; Purvis, E. H.; Carter, R. M.; Knight, J. A., McRobbie, D. G.; Scully, A. P.; Wilson, D. C.; Hutton, T. J.; Coke, C. E.; Foote, S. A.; Baker, E.

Therapeutics.—75 per cent. and upwards—Hazlewood, B. J.; Eagleson, S.; Marshall, H. W.; Collison, W. G.; Johnston, H. G.; Simpson, W. O.; Wrinch, H. C.; Stanton, A. T.; Barrie, H. C.; McMahon, J. J.; Hotham, A. W.; Caldwell, J. M.; Carter, R. M.; Kerr, W. A.; McLennan, E. J.

70 per cent. and upwards.—McGillivray, D.; McGibbon, G. C.; Broad, R. S.; Lavine, S.; Vankleek, P. D.; Weir, E. G.; Gesner, G. B.; Foote, S. A.

60 per cent. and upwards.—Schmidt, G. A.; Hutchinson, G. O.; Smith, H. R.; Langley, D. E.; Moore, J.; Wright, N. E. L.; Knight, J. A.; McLaren, G. H.; Doherty, C. E.; Purvis, E. H.

Passed.—Baker, E.; Scully, A. P.; McRobbie, D. G.; Palmer, R. J. Hutton, T. J.

Medical Jurisprudence.—75 per cent. and upwards.—Eagleson, S.; Stanton, A. T.; Wrinch, H. C.; Marshall, H. W.; Vankleek, P. D.; McGibbon, G. C; Hotham, A. W.; Kerr, A. W.; Peers, R. A.; Gesner, G. E. B.

70 per cent. and upwards.—Hazlewood, B. J.; McRobbie, D. G.; Smith, H. R.; Moore, J.; Barrie, H. C.

60 per cent. and upwards.—Schmidt, E. A.; Carter, R. M.; Palmer, R. J.; McMahon, J. J.; Doherty, C. E.; Baker, Ervin; McLaren, G. H.; Broad, R. S.

Passed.—Knight, J. A., Simpson, W. O.; McGillivray, D.; Hutton, T. J.; Foote, S. A.; Scully, A. P.; Hutchinson, G. O.; Coke, C. E; Coulter, L. McD.; Weir, E. G.; Caldwell, J. M.; Lavine, S.

Sanitary Science.—75 per cent. and upwards.—Kerr, W. A.; Eagleson, S.; Hazlewood, B. J.; Vankleek, P. D.; Marshall, H. W.; Stanton, A. T.; Weir. E. G.; Lavine, S.; McGillivray, D.

70 per cent. and upwards.—McRobbie, D. G.; McGibbon, G. C.; Schmidt, G. A.; Hotham, A. W.; Broad, R. S.; Wrinch, H. C.; Baker, E.

60 per cent. and upwards.—Barrie, H. C.; Hutton, T. J.; Coulter, L. McD.; Peers, R. A.; Moore, J.; Smith, H. R.; Gesner, G. B.

Passed.—McLaren, G. H.; Coke, C. E.; Hutchinson, G. O.; Carter, R. M.; Scully, A. P.; Wright, N. E. L.; Knight, J. A.; Caldwell, J. M.; Doherty, C. E.; McMahon, J. J.; Palmer, R. J.; Simpson, W. O.: Foote, S. A.; Wilson, D. C.

Special Prize in Physiology (Dr. Sheard's).

For the highest standing in Physiology of the First Year. Value $25 Robert W. Irving. Standing, 90 out of 100 marks.

Scholarships.

The 1st First Year's Scholarship, $50. Standing, 448 out of 500 marks. John Joseph Thompson.

The 2nd First Year's Scholarship, $30. Standing, 420 out of 500 marks. William A. McCauley.

The 3rd First Year's Scholarship, $20. Standing, 411 out of 500 marks. Robert W. Irving.

The 1st Second Year's Scholarship, $50. Standing, 471 out of 540 marks. W. H. Marshall.

The 2nd Second Year's Scholarship, $30. Standing, 458 out of 540 marks. F. H. Ferguson.

Medals.

The Second Trinity Silver Medal. Standing, 456 out of 560 marks. W. A. Kerr.

The First Trinity Silver Medal. Standing, 480 out of 500 marks. B. J. Hazelwood.

The Trinity Gold Medal. Standing, 496 out of 560 marks. Samuel Eagleson.

Admission of successful final candidates to the "Fellowship" of the College. Valedictory, by the gold medalist, Samuel Eagleson.

IS MIGRAINE A SOMETIME SYMPTOM OF URÆMIA?

The laboratory and clinical work of the past few years has done much to clear up disputed points in the etiology of disease. The effects of impaired hepatic and urinary secretions have latterly been commented upon very generally. The action however of urea or its products upon the nervous system has not received all the consideration that it deserves. Hence the recent communication from Dr. W. H. Birchmore, containing laboratory notes bearing upon this subject, which will be read with interest. They read as follows:

1. P. D., aged 22. Athletic young man, given to the bicycle and the like. Normally his urine contains 42 grams of urea in the 24 hours. Migraine lasted 18 hours. Urea excreted during migraine 15.4 grams. Urea excreted in the following 24 hours 72.1 grams.

2 Mrs. W., aged 40, blond, slight. Normal urea excretion is 31.3 grams. Migraine for eight hours. Urea during migraine 4.42, in following 24 hours 42.7 grams.

3. V. D., aged 25. Normal urea excretion 38.5 grams. Migraine for 18 hours. Urea excreted 10.2 grams. In following 24 hours 55 grams with some urine lost.

4. Mr. R., aged 53. Powerful man, blond. Normal urea excretion 53 grams. Migraine for 12 hours. Urea excreted 10.2 grams. In following 24 hours 81.3 grams.

5. Mrs. W. Particularly bad attack lasting 30 hours. Total excretion during attack 8.21 grams. In first 24 hours after attack 80 grams were excreted, second 24 hours 55 grams, beside some loss. I am informed that fever and some delirium accompanied this last attack. Personally I know nothing of the treatment, but the urine showed that phenacetine had been used.

In these few cases there will be noted an intimate relationship between the attacks of headache and the suppression of urea. To what extent this would hold true in a longer series it is impossible to state as data are lacking. Yet we have reason to believe that in a very large proportion the same conditions prevail.

In asthma, as well, the same rate has been found to hold true, and very remarkable results have been attained by the administration of urea solvents.

In these two the etiological factors are similar or identical so far as this product is concerned, though the exact way in which urea or its toxine exerts its influence upon the nervous system is by no means demonstrated Nevertheless, the treatment of these conditions is not influenced thereby, and we continue to use the compounds of lithia, potash, soda and salicylates with considerable success. While in lithæmic forms of migraine and asthma there are many symptomatic remedies, none can be permanently effective which fail to eliminate the products of impaired digestion and tissue metamorphosis.

ANTHROPOLOGICAL INVESTIGATIONS UPON CHILDREN.

A very interesting study has recently been made by Dr. Ales Hrdlicka upon 1,000 children, inmates of the New York Juvenile Asylum and the Colored Orphan Asylum. Numerous measurements were taken, including the height, sitting height, arm expanse, weight, dimensions of chest and head. The children also underwent thorough inspection and certain other observations employed in anthropological investigations. The object of the investigations was two-fold: First, to learn as much as possible about the children admitted to the asylums, and second, to contribute to the general work of the author in his attempt to add to our knowledge of the normal child, and of several classes of children who are, morally or otherwise, abnormal.

Of the 1,000 children examined, 700 were boys and 300 were girls. Of the boys 634 were white and sixty-six colored. The girls include 274 white and twenty-six colored children.

In age the white boys ranged from five to seventeen years, the white girls from five to eighteen. The colored boys from six to sixteen, and the colored girls from seven to fifteen years.

Among the 634 white males examined, 59, or a little over 9 per cent., showed no abnormality whatever on any part of their body. Among the 274 white girls examined, there were 35, or almost 13 per cent., on whose body there was nothing atypical. From among the 66 negro boys 5, or 7.6 per cent., were entirely normal, while out of the 26 colored girls there were 7, or almost 27 per cent, who showed no irregularities.

Thus about one-seventh of all the inmates of the New York Juvenile Asylum are without a blemish on their bodies. This proportion may perhaps seem somewhat small to those who are not accustomed to close examination of either children or adults. Observation of individuals met at large will soon convince one, however, that there are so many irregular ears, teeth, heads, faces, etc., that instead of regarding fourteen per cent. as too small a percentage of normality, he will wonder that it is so large.

It will be noticed from the above figures that the girls show a better physical standing in both the white and colored children, and also that the colored boys seem to be physically somewhat inferior to the white ones. As the examination of the boys was somewhat more thorough than that of the girls, the author believes that the percentage of abnormalties between the two are not widely different.

Particular study was made of the origin of the abnormalities in an endeavor to discover which were congenital and which were acquired by habit. In general terms it may be stated that on an average all classes of abnormalities predominate in the male children, both white and colored. This predominance is especially marked in the case of irregularities acquired by habit.

The white and colored children differ in their abnormalities very remarkably. The white children of both sexes possess on an average a decidedly larger proportion of inborn abnormalities. On the other hand,

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The following essay was awarded First Prize by the Trinity Alumni Association :

PELVIC DISEASE IN THE FEMALE INSANE--ITS SIGNIFICANCE AND OUR RESPONSIBILITY.

BY ERNEST HALL, VICTORIA, B.C.

In the progressive development of knowledge we from time to time come in contact with new facts and encounter additional problems. There is yet chaos "without bounds illimitable," wherein the patient investigator may discover paths through which some sufferer may pass from pain to peace. In many quarters the dark shadows of despair till enshroud lives once radient with hope. The spirit of the Master appeals to our best selves, that through our feeble efforts mankind may meet, at least, a measure of rest. Then be it ours to contribute what little lies within our ability to lessen humanity's sorrowful burden, "to give beauty for ashes, the oil of joy for mourning and a garment of praise for the spirit of heaviness."

The blights upon our race are many. The yellow scourge claims its thousands, while the 'white plague' its millions of victims, but who can pass through the wards of our insane hospitals without having every sympathetic chord vibrate with compassion not only for those restrained and confined unfortunates, but also for the relatives and friends who have been compelled thus to deal with their sick ones. Is not the loss of reason incomparable in the extremity of its anguish to all other forms of illness, and often considered even worse than death itself?

While many are endeavoring to determine the pathological basis of other obscure manifestations, comparatively few are, apparently focusing their efforts of research in this direction. Although not a fifth has already been accomplished, the field is wide and as promising as it is extensive. Not only to the brain and its coverings must we look but the investigation must include the whole body, so intimately connected are all its parts, and so close is the relation between the physical and the psychical. Dr. Bertel, pathologist to Georgia Asylum, states, "past experience has shown the fact that no constant lesions can be demonstrated in the brains of those dying insane, general pareses excluded. No one will deny the value of neuro—pathology *per se* but alone it will

never prove the path that will lead us on to victory. The prosecution of general pathology and especially that of the circulatory and glandular systems seems a much more promising field in which to delve."

Actuated by a desire to contribute to the relief of this class of sufferers and encouraged by the work of Manton and Boke in the United States and Holmes, Burgess and Hobbs in Canada, the writer was led to enquire as to the alleged frequency and to the influence of pelvic disease in the female insane, and to the results following the removal of such disease.

Not being officially connected with an insane hospital the facilities for such enquiry were necessarily limited. Through the courtesy of Dr. Bodington, medical superintendent of New Westminister asylum, the privilege was afforded of examining a former patient who at that time had been confined in the asylum upwards of two years. The conditions found upon examination warranted surgical procedures, and the results of treatment were such as to encourage further prosecution of the enquiry. As opportunity offered, other cases were examined and submitted to treatment with results as startling as they were interesting entirely corroberating the findings of other investigators. Examinations were also made in cases who presented the milder types of mental abnormality who were cared for at their homes. Also at the request of Dr. Gillis, medical superintendent of Brandon Asylum, Manitoba, thirty-one female inmates were examined as to the condition of their pelvic organs. These were selected from among the most intelligent looking, avoiding all who presented any indication of hereditary or nervous disease.

Series A.

Report of examination of Pelvic Organs of sixteen female insane, who were at the time of examination or had been inmates of New Westminster Asylum.

No.	Age.	Married or single.	Children.	Miscarriages.	Duration of insanity, years.	History of Pelvic Disease.	Nature of Pelvic Disease.
1	35	M	2	....	3	.....	Cystic prolapsed and adherent ovaries.
2	59	M	4	....	1½	Pelvic inflammation for six months ..	Lacerated perineum.
3	47	M	....	....	3	Ovaritis fifteen years ago	Retroversion with dense pelvic adhesions.
4	20	S	....	....	2	.....	No abnormality.
5	44	M	....	....	1½	.....	Undeveloped condition.
7	45	M	9	3	¼	Prolapsus uteri several years ago ...	Enlarged uterus, partial descent.
10	38	M	2	....	4	Inflammation after birth of last child.	Cirrhotic and prolapsed ovaries.
11	50	M	1	....	1¼	Pelvic inflammation	Salpingitic adhesions.

SERIES A.—*Continued.*

No.	Age.	Married or single	Children.	Miscarriages.	Duration of insanity, years.	History of Pelvic Disease.	Nature of Pelvic Disease.
15	50	M	1	1	1	Inflammation following mis-carriage	Lacerated perineum. Retroversion with adhesions.
16	25	M	3	....	2	.....	Lacerated perineum. Enlarged right ovary.
17	59	M	4	....	1	.....	Lacerated perineum, deep.
18	32	M	....	....	6	.....	Cirrhotic ovaries. Salpingitic adhesions.
19	30	M	2	....	2	.....	Lacerated cervix. Retroversion with adhesions.
20	42	M	4	....	4	Pain in side and back	Retroversion, adhesions.
21	32	M	1	....	10	Gonorrhoeal inflammation of pelvis .	Perineum lacerated. Cystic and adherent ovaries and tubes.
25	30	M	3	1	10	.....	Lacerated perineum and cervix, enlarged ovary with adhesions.

Of this series fifteen were married and one single. One presented defective development and of the others all but one presented gross pelvic lesions.

Series B.

Report of examination of Pelvic Organs of thirteen female insane not inmates of an Asylum.

No.	Age.	Married or single.	Children.	Miscarriages.	Duration of insanity, years.	History of Pelvic Disease.	Nature of Pelvic Disease.
6	28	M	3	2	¼	Pelvic pain three years.....	Lacerated perineum. Enlarged and cystic ovaries.
8	25	M	2	1	⅛	"Blood poison" following miscarrage	Lacerated cervix. Retroversion. Tubo-ovarian adhesions.
9	46	M	4	....	12	"Inflammation" following child-birth	Lacerated perineum. Tubo-ovarian abscess.
12	39	M	3	4	few weeks.	.....	Deep lacerated cervix.
13	45	M	4	....	few weeks.	.....	Lacerated cervix. Enlargement of uterus, adhesions.
22	35	M	....	3	⅛	"Appendicitis" one year ago.....	Tubo-ovarian adhesions.

SERIES B.—*Continued.*

No.	Age.	Married or single.	Children.	Miscarriages.	Duration of insanity, years.	History of Pelvic Disease.	Nature of Pelvic Disease.
23	30	M	3	....	3	.....	Ovaries enlarged and adherent. Retroversion.
24	42	M	6	3	1	.....	Lacerated perineum and cervix. Retroversion and enlarged ovary.
26	18	S	....	....	few weeks.	"Appendicitis" one year ago	Salpingo-ovarian adhesions.
27	62	M	7	....	1	"Falling of womb" for several years.	Par-ovarian cyst. Lacerated perineum, enlarged uterus, cervical polypus.
28	56	M	7	....	2	History of old pelvic inflammation.	Lacerated perineum, bilateral salpingitic adhesions.
29	28	M	4	....	2	.....	Lacerated cervix, enlarged ovaries.

Of this series twelve were married and one single, and all presented distinct pelvic lesions.

Series C.

Report of examination of thirty-one female inmates of Brandon Asylum, Manitoba.

No.	Age.	Married or single.	Children.	Miscarriages.	Duration of insanity, years.	History of Pelvic Disease.	Nature of Pelvic Disease.
30	50	M	2	?	1½	"Tumor of womb" for several years.	Interstitial and also intraligamentous myomata.
31	36	M	4	?	4	.....	Cervical laceration, enlarged ovaries.
32	28	S	....	....	4	.....	Retroversion with adhesions. Cystic ovary.
33	27	M	3	?	4	.....	Deep laceration of cervix.
34	27	M	3	?	3	.....	Cervix and perineum lacerated, cystic ovary.
35	18	S	....	....	2	.....	Conical cervix, pin-hole os, right ovary enlarged.
36	36	M	1	....	7	.....	Lacerated cervix, salpingitic adhesions.
37	28	S	....	....	3	.....	Acute anteflexion, enlarged uterus.
38	25	S	....	....	2	.....	Elongated cervix, enlarged left ovary.
39	58	M	4	4	7	.....	Lacerated cervix and perineum, erosion of os, left salpingo-ovarian adhesions.

SERIES C.—*Continued.*

No.	Age.	Married or single.	Children.	Miscarriages.	Duration of insanity, years.	History of Pelvic Disease.	Nature of Pelvic Disease.
40	30	S	....	....	3	.....	Retroversion with adhesions.
41	28	M	1	....	2	Was very ill after last confinement.	Right ovary enlarged. Lacerated perineum, retroversion, fibroid tumor filling up pelvis.
42	54	M	6	....	8	.....	Lacerated cervix and perineum, retroversion with adhesions.
43	38	S	....	....	3	.....	No abnormality.
44	30	M	?	?	?	.....	Lacerated perineum. Salpingitis adhesions.
45	28	S	....	....	7	.....	Conical cervix, enlarged right ovary.
46	35	M	1	....	2	.....	Laceration of cervix and perineum.
47	45	M	3	....	7	.....	Laceration of cervix and perineum, salpingitic adhesions.
48	28	M	1	....	2	.....	Deep lacerated cervix, salpingo adhesions.
49	29	S	1	....	2	.....	Lacerated cervix, adhesions on left side of uterus.
50	25	M	1	3	one month.	.....	Lacerated cervix and perineum, uterus enlarged and adherent.
51	36		1	?	5	.....	Lacerated perineum and cervix, enlarged uterus.
52	28	M	....	....	2	.....	No abnormality.
53	34	M	2	?	?	.....	Lacerated perineum, broad ligaments thickened.
54	33	S	....	....	6	.....	Uterus drawn to right and fixed.
55	23	S	....	....	one month.	.....	Elongated cervix, adhesions upon left side.
56	32	M	1	....	3	Epileptic	Retroversions with adhesions.
57	36	M	3	....	1½	.....	Lacerated perineum and cervix, ovary enlarged and adherent.
58	59	M	6	?	2	.....	Lacerated cervix, enlarged uterus.
59	21	S	....	....	5	.....	Left ovary enlarged and cystic.
60	40	M	6	....	3	.....	Lacerated perineum and cervix, enlarged ovary and retroversion.

Of these twenty were married and eleven single, and all but two showed well marked disease of the pelvic organs.

Chloroform anethesia was required in about one-half the examinations, no unfavorable results following. A somewhat hasty general examination was made. It is to be regretted that inability to procure the services of a competent alienist renders the results of examinations of less scientific value than if we had an accurate and detailed statement of the nervous system of each patient.

These tables show :

(1) That out of sixty patients examined, fifty-seven presented gross abnormality of the sexual organs, and excluding one who presented an undeveloped condition fifty-six, or ninety-three per cent., showed actual disease.

(2) That the number of married patients is forty-seven, while the number of unmarried is but thirteen, a ratio of about three and a half to one.

(3) That of those who showed no pelvic abnormality one was married and two unmarried.

In one hundred and thirty-six patients examined by Hobbs in the London (Ont.) Asylum, pelvic disease was found in one hundred and twenty-six, a little more than ninety-two per cent. Dr. Manton, of Detroit, reports the examination of one hundred inmates of Eastern Michigan Asylum, giving pelvic disease in eighty-one. In Maryland hospital for the insane, Dr. Kohi found forty patients suffering from pelvic disease in one hundred examined. Dr. Brown, of Central Kentucky Asylum, as far back as 1894, wrote "I am convinced that an examination would show fully twenty-five per cent. of the female population of our state institutions suffering from some form of pelvic disease." The wide discrepancy in the finding of different examiners may be partially accounted for by their individual conception of what constitutes a pathological condition. For instance, a slight cervical tear with dense cicatrix, or rupture of the perineal muscles with the skin intact may easily be passed over or considered non-pathological by one examiner, and by another of sufficient importance to report. My custom is to report only such conditions as in the opinion of the ablest authorities are capable of producing in the sane, local pain, discomfort or general systematic disturbance. Slight lacerations of the cervix without eversion of the mucus membrane do not come within this classification.

Aside from my own statistics ample evidence has been submitted to show that a very close association exists between diseases of the female pelvic organs and mental aberration, whether this is but a casual association, or whether these conditions stand to each other in the relation of cause and effect, or if causation can be predicated of the pelvic condition, we shall attempt to determine.

ITS SIGNIFICANCE.—It should be made clear that not one of the patients examined presented any distinct indications of degeneracy. Assymetry of features, high-arched palate, irregular ears, defects of speech, deafness, chorea strabismus, wavering eyes or twitching of facial muscles, were conspicuous by their absence. In but two cases was a history of herity

obtained, but as information relative to this matter was not given in case of the Brandon examination this result is incomplete. Meningial tuberculosis was present in one case, although not diagnosed at the time of examination. One case I learned, after the removal of a parovarian cyst with salphingitic adhesions, had always shown an erratic disposition. Another case with undeveloped organs also suffered from epilepsy and chronic nephritis, one that had previously suffered from uterine polypus and prolapsus took influenza followed by acute ethmoiditis, which latter was possibly the exciting cause of a brief insanity through well-known channels of infection between the nares and cranial cavity, while one gave indication of former syphilis. Eliminating these five and to them adding the three in whom I was unable to determine any physical disease, we have remaining fifty-two in whom no lesion was demonstrable other than that of the sexual organs. We do not presume to say that because in these latter none other than pelvic disease was found therefore it did not exist, far from it. Many women who present similar conditions of the pelvis give no indication of abnormal mentality. It is more reasonable to suppose that the pelvic condition is but one of many factors that unite in the production of this result. There may be a hereitary or acquired predisposition, an obscure disease of the circulatory or nervous systems, a septic intoxication from the absorption of the bi-products of faulty digestion, or the deleterious effect upon the higher centres of the imperfect secretion of glands either actually diseased or so altered in their functional activity as to produce abnormal secretions, or a combination of some or all of these causes, the pelvic disease being at times but the last straw to the camel's back. But theorize as we may the fact is before us that actual pelvic disease was found in by far the greater number examined.

It is not within the purpose of this paper to discuss the nature of mind, nor to enter into any purely psychological question. Daily experience is giving additional proof of the truth of the old proverb "mens sana in corpore sano." Prof. Foster tells us that "changes in what we call the body, bring about changes in what we call the mind." Demonstration is unnecessary to show that the sexual system, while in direct sympathetic connection in common with other organs, has also a unique connection with the psychical, nor to trace the relationship between a given psychological state and that of local pelvic congestion, and the channel through which this is made possible, is the same channel through which a local pelvic irritation may produce abnormal cerebral activity with disordered cortical function giving rise to and indicated by abnormal mentality. These influences from peripheral irritations of the sexual organs may at times be inhibited by a strong mentality, but they may, if severe and persistent, eventually overcome the strongest subjective effort. Given a certain environment of a strongly sexual character in a robust person, certain alterations of form and function follow in response to such stimuli in spite of effort of the will to the contrary. To obviate the result the environment, or stimuli, which may be purely psychical, must be removed. Now if such stimuli, not necessarily objective, are sufficient to produce organic change in defiance to the will, so may a local pelvic irritation or

stimulus, acting upon the higher nervous centres cause abnormal psychical action also in defiance to will power, to cease only when the abnormal evironment or peripheral irritation is removed. This was illustrated in the experience of my first case, who after her recovery gave me a somewhat detailed history of parts of her insane life, stating that she experienced and recognized within herself a force totally distinct from herself which impelled her to speak and act directly against her better judgment. This force, formerly called Satanic, is but the unconquerable abnormal psychical reflex from a sensitive and diseased periphery, and the patient vacillates between reason and insanity as this force is subservient to and dominated by the will or becomes the ruling power in the organism.

If the statements made by the authorities quoted and the theories advanced be correct, then we should expect to find that relief, if not complete cure of the mental trouble following, in a certain proportion of cases, the removal of the pelvic disease. If such results follow, we may justly conclude that the pelvic disease was at least a factor of causation, and here we are not dissappointed, for the results in this department are possibly the brightest in the history of surgery, and with physical results that will bear investigation, we have also a large per cent. of mental recoveries. However satisfactory it may be to report recovery after the removal of physical disease, it is not to be compared to that experienced when we also have the restoration of the mental. To remove physical disease and at the same time to "minster to minds diseased" is the highest ideal of surgery.

As to the results of treatment of the insane, I shall give them so far as they can be gathered from recent literature and correspondence.

Name of operator.	Cases operated upon.	Cured mentally.	Improved.	Not improved.	Died from operation.	Too early to report. Operations performed within the last six weeks.
Roke	34	14	5	12	3	.....
Manton	17	4	3	10	.....	.....
Holmes	23	23	.....	.....	.....	.....
Burgess Op. by Gradiner	3	3	.....	.....	.....	.....
Hobbs	131	47	27	46	3	.....
E. Hall	22	4	7	3	1	7

To compared these results with recoveries under ordinary asylum management would be unfair as many of these had spent years in the asylum and *were considered hopeless cases* by the medical superintendent.

OUR RESPONSIBILITY.—We have seen that insanity is to be investigated according to well-known methods of pathological research, that we have arrived at one of the underlying causative conditions, which in a certain proportion of cases, is diseased pelvic organs, and that such

disease lies within the compass of therapeutic measures. With this conception of insanity comes a new responsibility, especially to those who had formerly considered its development the limits of their medical jurisdiction. We must now consider insanity but the indication of a serious physical lesion, demanding the utmost care and skill upon the part of the attendant to determine and treat such lesion. At times such disease may be easily found but frequently and unfortunately it will elude his grasp. To consign to the asylum before giving the patient the benefit of modern therapeutics is unjust to the patient, and cruel to the friends. To be sick may be unfortunate but it is not necessarily a disgrace, neither should the occurrence of insanity in one member of a family be the instance of cashing reflection, but so long as such erroneous conceptions exists in the public mind we cannot be too careful in this matter. To those in whose family this affection has fallen and who live in perpetual dread lest through some mysterious visitation that they also may become victims, we can bring hope; assuring them that the conception of "mental disease" as distinct from physical lesion has passed away, that insanity is not the result of some vague demoniacal influence nor the indication of disfavor upon the part of an offended Deity, but the direct result of physical disease, and only follows where physical degeneracy leads. And to our female patients who, under the burden of life duties and oppressed by its sorrows, harassed by the customs of society and irritated by disease, whose mentality at times indicates the result of constant peripheral irritation, whose reflexes refuse to submit to subjective guidance and become temporarily dominant, and who reasonably look to us for relief, what shall we say? Is asylum life with its unpleasant associations, its stone walls, iron bars, and uniformed keepers, the atmosphere calculated to restore jaded nerves, to recuperate a wearied body and remove local disease. On the contrary admitting the utmost kindness upon the part of those in charge, is not such an environment comparatively as irritating to a sensitive nature as her local disease is abnormal? Only after all methods have been exhausted and not until then, should we permit our patients to be removed to the care of the state. Let us look at this matter fairly and if necessary in the concrete. In view of what has been accomplished in the modern treatment of insanity, and in view of the true conception of insanity how would you or I act with regard to one who is closest to us in ties of affection? Let us consider such symptoms as formerly but finger-posts pointing to the asylum as indications for the necessity of closer examination and more skilful treatment, remembering that every case committed is a painful admission upon our part of inability to locate or remove the physical disease. If such care were habitually exercised, the asylum commitments would be appreciably less.

From our responsibility as physicians we may merely glance at the wider scope of citizenship which also entails its duties and responsibilities. The economic aspect of this question is not to be overlooked. The economy of public funds and the diminution of public expenditure are matters of no small import in relation to this question, but I leave others to elaborate this department.

With reference to the treatment of these cases the day of Churchill's tincture of iodine has gone and with it the role of useless pelvic calisthenics that we were taught to play. Lacerations, strictures, adhesions and neoplasms require more effective measures than sound and swab. The established principles of operative gynecology apply to the insane as to the sane, viz: if possible to restore the parts to their natural condition, if not to remove the deceased structures We do not presume to state that in the pelvic is found the source of all female ills, but we do insist that an insane women should be given relief from physical suffering as well as her sane sister. Why should she suffer from prolapsus ovarian-cyst pyosalpinx or other unnecessary physical disease when recognized methods of cure are at our disposal? Surely her mental distress is sufficiently great without the addition of bodily discomfort. Clifford Allbut says "pelvic disease in the insane should be made the subject of treatment" and what intelligent practitioner can raise a dissenting voice?

In conclusion the writer expresses a hope that the attention of the profession be directed to the frequency of the Association of pelvic disease in the female with insanity, the frequent causative relation of such disease and the possibility of mental restoration following its removal.

ONTARIO MEDICAL ASSOCIATION.

The nineteenth annual meeting of the Ontario Medical Association was held in the Normal School Building, Toronto, June 13th and 14th, Dr. W. J. Gibson, Belleville, presiding.

The following gentlemen were introduced to the Association: Dr. Wilding, delegate from the New York State Medical Society; Dr. Christian Fenger, Chicago; Dr. V. V. Bowditch, Boston; Dr. J. C. Wilson, Philadelphia and Dr. D. W. Montgomery, Los Angeles, Cal.

Dr. J. F. W. Ross presented the report of the Committee on Papers and Business, which was approved. In the absence of Dr. J. A. Temple, Dr. William Oldright presented the report of the Committee on Arrangements; also approved.

A Case of Muscular Dystrophy.—Dr. Ingersoll Olmsted, Hamilton, Ont. The subject of this case was a young married man twenty-five years of age who had come to the Doctor complaining of wasting of muscles and inability to work. His family history showed that other members thereof (though not in either parent) had been afflicted with the same trouble. The patient was presented to and examined by the members of the Association, the peculiarity of his gait and movements noted, especially interesting being his manner of assuming the erect posture from a prone position. Wasting was most marked in the region of the scapulæ, deltoids, biceps, fore-arm and thigh muscles, whilst those of the calves and hands were moderately well developed. Winging of the scapulæ was especially well marked.

Dr. McPhedran stated he had examined the case with very much interest. It was an orthodox case of this kind but presented one or two phases of unusual character, especially the preservation of the trunk muscles. He thought there must be some degeneration of nerve fibres present in these cases.

Dr. Geikie thinks that as we come to know more and more of this disease that destructive changes will be found existing in the nerve centres.

Dr. Olmsted. With regard to what Dr. Geikie has said, thought there was no question that extensive atrophy takes place without any involvement of the central nervous system.

Relapse in Typhoid Fever.—Dr. J. C. Wilson, Philadelphia, read a very interesting and able paper on this subject. He exhibited a number of temperature charts and said that special attention should be paid to the condition of the gall bladder as a causative factor in producing these relapses. He took this as his "working hypothesis," and proceeded to demonstrate the concomitaneous occurence of a relapse with the renewed physical movements of the patient, the beginning of the administration of the more solid forms of food, the consequent peristalisis thus produced in the gall bladder and the consequent discharge of the accumulated contents of this cyst, containing large quantities of the bacillus typhosis

into the intestine, thus producing the reinfection and the relapse. This he thought, must be due to intrinsic and not extrinsic infection. Dr. Wilson then spoke for some time on immunity and concluded in this way: "thus we have a 'working hypothesis' to explain relapse, which may be set forth in these terms; intrinsic reinfection from the gall bladder at a time when the intestines are stimulated by larger meals of a different character, an immunity not yet complete and reinfection at once without a period of incubation." He perfectly understands that the change in the blood serum which underlies the Widal test is not a process of immunity but a process due to the infection. He closed his admirable paper as follows: "That the histological changes taking place in the solids and fluids of the body bringing about immunity are also gradual and if the 'working hypothesis' stands at all, it demands that complete immunity shall be established in the primary attack, otherwise intrinsic reinfection which gives rise to the relapse, could not possibly occur.

Dr. McPhedran thought Dr. Wilson's definition of relapse a good one, and that he drew a very clear picture of it. We know that some of the cases of typhoid may be an abortive attack and he saw no reason why relapses also should not be abortive. The question of the gall bladder as being the source of the infection of these relapses, is a very important one, because of the suddenness of the outbreaks of symptoms. He thought it might be due more directly to the toxines in the bile.

Dr. J. L. Davison quoted Fagge who refers to cases in Guy's hospital that had died from the sequelæ of typhoid, weeks and weeks after convalescence had been established, and on post mortem examination, Peyer's patches were found still infected or still in a condition which showed evidences of the bacillus. In many cases the disease smoulders along for weeks and while Dr. Wilson's hypothesis of the gall bladder is a reasonable one, it hardly explains why we should have cases of relapse after thirty days and later, and therefore, Dr. Davison thinks there must be other store-houses for the retention of the specific germs than that. The question of the number of relapses is a very interesting one. While Dr. Wilson stated he had seen as many as seven in a six-months' illness, the largest number he had seen in any one case was three. He instanced a case of recovery after perforation. The question of immunity was an interesting one in typhoid fever. From recent researches it appears that there are two immunity substances, one which produces an antitoxin and destroys the action of the toxin in the body and thus serves to keep the patient alive; and the other which is bactericidal in its action. It appears that we must have both of these in order that a patient may recover from the disease. It is this bactericidal element which has a laage part to play in the destruction of the germ itself.

Dr. Thistle asked why go to the gall bladder when the bacilli are in the intestinal contents.

Dr Wilson in reply stated, the infection comes from the gall bladder, because the toxine is accumulated in a great mass in a hollow viscus, which under physiological conditions of the low diet may remain there;

but when you begin to feed the patient at longer intervals with solid foods, the gall bladder is suddenly stimulated to empty itself. Dr. Wilson did not exclude the intestine if the gall bladder is quiescent. Under the condition of feeding small amounts of fluid alone the gall bladder is not stimulated to push out its contents.

Tuesday, 2.30 p. m.

The Hon. G. W. Ross delivered an address of welcome to the Association. He expressed his pleasure at meeting the medical gentlemen of Ontario. " We look on the medical men of the Province as belonging to a class of progressive educationists who are of assistance to the Department of Education in maintaining the proper scientific spirit in the country." He spoke on the subject of tuberculosis and said if the Medical Association of this Province can throw out some hints whereby that disease can be banished, they will have conferred a great boon upon the people of this country. There is no profession to which the Province owes more than it does to the medical profession. In this instance he referred to the extent in which that profession had guarded all of us from contagious diseases, and improved sanitary conditions everywhere and made hospitals habitable. Speaking of the standards of education, he was in favor of keeping these up and emphasized having a good general English education before entering upon professional studies and after four or five years of professional study, no one could say that the medical profession was not an educated body. The doctor is one of the most influential members of the community. Health in the public schools next engaged his attention and he exhorted the profession all over the province to interest themselves in this most important object. Physical training and exercise should go hand in hand with mental development. He referred to the unhygienic condition of public schools in regard to fresh-air-space per pupil, lighting, heating, ventilation, etc. Improvements all along this line would tend to develop a good strong, sturdy, Canadian stock. Home lessons should not be imposed upon the children so far as the Department of Education is concerned. Examinations at too early an age were injurious and harmful. The country must produce men, strong in mind and body, men with nerves that will endure the strain of public life.

President's Address. Dr. W. J. Gibson, Belleville, Ont., expressed his thanks at the honor conferred on him at having been made president of the Association. In regard to serum therapy, it was a matter of congratulation to the profession to know that so many able workers are in the field He instanced tuberculosis and stated that the whole world was on the alert to discover a cure for this disease. More attention should be given to personal hygiene and cleanliness. It would be difficult to estimate what good purpose it would be to report all the cases of tuberculosis to the health officers. It would be a difficult matter, however, to make isolation in all cases compulsory. He spoke of the number of diseases now treated with anti-toxins. No doubt investigators were

on the threshold of important discoveries. Every member of the profession should investigate the causes of diseases more carefully, Dominion registration under Dr. Roddick bids fair to become an accomplished fact. It is to be hoped some feasible plan could be adopted whereby the student may be spared the examinations and the expense of being licensed in another province. In regard to over-pressure in the schools, he was glad to know that the Toronto School Board had done away with final examinations. The combining of mental and manual work or Technical schools, is desirable. He spoke of the improvement in medical teaching in regard to there being more clinical instruction than didactic lectures and the importance of laboratory work was emphasized. The public is indebted to the medical profession for the lives saved, suffering reduced and the calamities averted in civilized countries. Physicians stand in the front rank of the benefactors of mankind.

Dr. Bruce Smith moved, seconded by Dr. Harrison, that the president be tendered a hearty vote of thanks for his admirable address; carried.

SYMPOSIUM ON TUBERCULOSIS.

Sanitarium Treatment of Pulmonary Tuberculosis.

Dr. Vincent Y. Bowditch, Sharon Sanitarium, Boston, stated it was gratifying to notice the marked change of opinion in regard to the treatment of tuberculosis in institutions devoted to that work. Massachusetts had been the first State in America to establish sanitaria. He gave a short history of the Rutlaud and Sharon Sanitaria. It was important to keep this class of hospitals for the incipient disease. He spoke of the educational influence of the hygienic methods employed in these Sanitaria. Open windows even in cold weather was to be insisted on as a special treatment of the disease. Patients have returned to these Sanitaria begging to be taken back because they could not breathe in their own houses. He thought much more could be done for the patients by having them treated nearer home. Much more can be accomplished by treating consumptives in these Sanitaria than by treating them in their own homes. Thirty per cent have been discharged at Sharon as arrested cases. Dr. Bowditch has never used the term "cure," believing that the term is unjustifiable until after a lapse of years and no symptoms returned.

The causes of death in these cases:

a. Advanced condition of the disease on entrance.

b. Intercurrence of some other disease.

c. Too early departure from the Sanitarium and return home to the unhygienic conditions.

As to treatment, experiments were made with the so-called specifics. Oil of peppermint proved at times beneficial. Creasote was found to be beneficial as an aid to digestion. Antiphisin proved negative. Had refrained from the use of the serum treatment. Abundance of fresh air, judicious exercise, pulmonary gymnastics and calisthenics form the base of all treatment. Results at Sharon mean that Sanitaria should be near

all the large cities and towns. He congratulated the profession in Ontario upon the establishment of the Sanitarium at Gravenhurst and spoke also of the necessity of having hospitals for the hopelessly sick. We take away the principal source of infection when we remove these from their homes.

Pathology of Tuberculosis. Dr. W. T. Connell, Kingston, who was to read this paper was unavoidably absent.

Earliest Diagnosis and Selection of cases for Sanitarium Treatment. Dr. N. A. Powell stated that for ten years he had practiced in a part of the Province where phthysis is practically unknown. The diagnosis of early phthysis calls for what we understand by incipient or early phthysis —the pre-tuberculous stage. In this regard our views have changed materially within recent years. Up to the time of the demonstration of the bacillus, a case was considered early unless there were large growths within the lung, and until gross constitutional symptoms had shown. There is an inherent tendency towards recovery in phthysis when recognized early. This leads to the question, how often is phthysis recognized in an early stage, in a stage before physical signs are manifest in the chest and before expectoration has commenced. A very slight proportion of such cases are recognized. Why? The teaching of the students in diagnosis is exceedingly efficient. Why are mistakes made outside, and disease of the lungs not recognized until serious inroad has been made into the health of the patient? A part of it comes from the earnest belief that the physician's education has been complete though crowded. Medical students crowd the course in surgery and gynaecology but neglect physical diagnosis. He believes early diagnosis will depend upon close study and family and personal history. There are certain aids to the examination, such as the use of the fluorscope and the tuberculin test. In regard to the state of the family history and the personal make-up of the patient, in the careful examination, it is important to estimate weight and height together before you can arrive at anything of importance. The symptoms of early phthysis are uncertain. None of them upon which you can rely. A man who is in apparently excellent health, may have serious pulmonary disease. It is sometimes important to notice any scars of the neck. As to cough and early haemorrhage—distinct haemorrhage which comes with comparative earliness—are two symptoms of importance. The patient should be made to cough in the presence of the physician and any sputum thus gained should be examined. In regard to physical diagnosis, if you wish to estimate the value of a stethoscope, take a watch and place it on the table, then with the back of the hand on the watch, place the bell of the stethoscope in the palm of the hand and listen to the tick of the watch in this way. In examining a patient, the stethoscope should always be used whose accuracy is above suspicion. The evening temperature running up $\frac{2}{5}$, $\frac{3}{5}$ or one degree associated with morning pallor is one of the most important elements in early diagnosis, Dr. Powell spoke of the physical examination and said the patient should always be stripped to the skin and examined

in a quiet room. If you can get association of relative dulness in the spinous fossae with the slightest accentuation and conveyance of the whispered voice or any prolonged expiration, it is safer to treat such a patient as being probably tubercular. In a case presenting progressive loss of weight and loss of physical energy, if one gets a little wavy or cog-wheeled respiration near the lung, it is safest to treat such a patient as being probably tubercular. Personally, without having much basis to go on, he said that he was afraid to use tuberculin as a test for the fear of lighting up tuberculosis. In a case of prolonged expiration and evening fever, he was very unwilling to try the tuberculin test. As to the fluorscope, Dr. Williams, of Boston, has done perhaps the best work upon this subject. With this instrument, it is perfectly easy to recognize excursions upwards and downwards of the diaphragm during respiration, the average excursion in the adult male being about two and one-half inches. If it is notably lessened on one side, it would raise strong suspicion of the presence of tubercle. Dr. J E. Graham took the position some years ago that there might be considerable advance in the condition without being recognized by even a trained observer. The apparatus of Roentgen is of a positive value when a trained observer recognizes the movements of the diaphragm, and a man of expertness may recognize degrees of shading which will be of benefit in diagnosis.

Home Treatment and Prevention of Tuberculosis.

Dr. T. F. MacMahon, Toronto, read this paper and first spoke of how we should treat the patient in his own home and what means we shall take to cure the disease and stay its ravages. Without a specific germ, there could be no tuberculosis. The main source of infection is the sputum and then infected food. Prompt destruction of the sputum would go far towards the removal of the disease. The public generally and the patients generally must be educated to this fact. Instruct your patients never to spit on the floor or into a handkerchief. Sputum should be received into proper spit-cups. That the danger from handkerchiefs is a real one is borne out by the facts that washerwomen in health resorts have contracted the disease through washing these handkerchiefs. Very fine drops of saliva may be a source of infection. Intimate association with coughing consumptives is dangerous to nurses in the rooms. Another important instruction is that rooms should be dusted with damp cloths using a disinfectant solution. Government and Health Boards must take the question up in earnest. Without education of the public, all our efforts will be in vain. Of course newspaper propaganda should be carried on. Premises occupied by consumptives and vacated, should be made fit for occupation by the Health Board. Bacteriological examination is quite as important. Association of consumptives with other patients in public hospitals is injurious and scandalous. Consumptives should not be treated in the ordinary hospitals. There should be systematic inspection of dairies and food supplies. There is also danger of infection from domestic pets, cats, dogs, birds &c. The germ of tuberculosis is always with us. Patients should have as much open-air exercise as it is possible to acquire.

Individuals especially pre-disposed should receive special attention. If the family physician would make it his duty to watch out for badly formed chests, he could do much. Prompt attention should be paid to anæmic and dyspeptic young women. Every precaution should be taken against "cold-catching." The patient should not choose a sedentary occupation. Much out-door life is especially desirable. Cure is altogether a question of instruction. There should be no cough mixtures. The nearer we approach the methods of the Sanitaria, the better our results will be. The only method is the open-air treatment. The patient should occupy the room when in the house with the most sunshine. Nothing should be allowed to interfere with the fresh-air treatment. Rest in the open air will improve the digestion. Excellent results have been obtained from this treatment in the Sanitaria. Cod Liver Oil where it agrees is undoubtedly useful. The best results follow the administration of Creasote—not too large doses.

Care and Prevention. Dr. Charles Sheard spoke of the open-air treatment as the ideal treatment from the tubercular standpoint. In every case where we find the bacillus present, we have a case of tuberculosis to deal with. If several examinations at various times fail to show any evidences, he thinks we have not got a case of tuberculosis to deal with. This is not the only disease which fresh air benefits. Many cases of bronchitis and bronchiectasis are also benefited thereby. The Sanitarium is anxious to do cures in tuberculosis. There are a great many cases with cavities in the lungs and we have to care for those cases as well. We have all seen these cases very recently put side by side in the same ward with a patient with chronic bronchitis, with another with pleurisy and with another case with obscure chest trouble; yet there ought to be better places for the care of these cases. There ought to be separate buildings in connection with our hospitals for those cases which the Sanitaria will not admit. The profession ought to stand united for the attainment of this object. He spoke of the benefit of the open-air treatment and thought there should be glass houses and glass sheds so as to protect them from the changes in the weather. Much can be hoped for if patients are kept constantly in the open air. As regards the danger of getting tuberculosis from animals, Dr. Sheard quoted Clifford Allbutt who fed his own family with the meat of tuberculous cattle and yet none of them contracted the disease. The tuberculin test applied to cattle is a very crucial one. In one cow which responded to the tuberculin test, tuberculosis was limited to one gland alone Generally we agree that tuberculous milk is dangerous according to the stage of the tuberculosis in the animal. How far are we prepared to go in enforcing laws re infection of this disease in animals and in man? He thinks the practitioners should report this to the Health Board. We must understand that we have got a vastly different disease to deal with than the acute infectious diseases which run their course in a few weeks. How much separation from the general public are we prepared to enforce on a consumptive or whether we are right in doing even this. It is very questionable if we are prepared to enforce segregation in these cases and it is doubtful if the

public is ready for this just now. In the meantime steps should be taken to notify hotels and lodging houses of cleansing rooms occupied by consumptives.

Dr. Beeman, Newburgh, Ont, spoke of the bacteriological work done in the laboratory and thought that more should be done by the general practitioner. He thought he better secured the confidence of the patient by having this apparatus in his own office to give this gross diagnosis.

Dr. P. H. Bryce dealt with the establishment of Sanitaria from the governmental standpoint and quoted statistics showing the widespread prevalence of tuberculosis in the Province.

Dr. McConnell, New Mexico, told of three years experience in the far South West. He stated that more patients were now sent out there in whom as yet the bacillus has not been demonstrated, i. e., in the pre-tuberculous stage.

Dr. John Hunter said every physician should examine the chest of every one of his patients, no matter what disease he came to be treated for.

Dr. Wm. Oldright.—Notification of the disease should be given in all cases. Disinfection after habitation by a consumptive should be carried out; also sleeping-cars after carrying a patient to a health resort. He thought we ought to have Sanitaria near the city.

Dr. Playter spoke of the use of ozonised air in the treatment.

Dr. Coventry, Windsor Ont, thought la grippe was responsible for laying the foundation for many of these cases.

Dr. Price Brown, Toronto.—The lungs are only part of the respiratory apparatus. Every medical man should be able to use the Laryngoscope and the Rhinoscope. By treating the nose and throat, you can sometimes prevent the disease; and do not forget that you may have tuberculosis without cough or expectoration.

The annual banquet of the Association was held in the evening at McConkey's restaurant, Dr. W. J. Gibson presiding. A very enjoyable evening was spent by all present.

Wednesday, June 14th.

SURGICAL SECTION.

Dr. Wishart, London, Ontario, was elected chairman of this section

Inguinal Hernia. Dr. Wm. Oldright presented four patients, in all of whom he had performed the radical cure very recently. He quoted the indications for and against operating in these cases as set forth by Dr. W. B. Coley in Sajous' Annual. He thought Halsted's modification of the Bassini method was not an improvement.

Treatment of Hernia.—Dr. A. McKay, Ingersoll, Ont., estimated that something like twenty per cent. of the population was ruptured. He exhibited a new truss which he had contrived after a year's experimenting, and stated that in making trials of its efficiency, he had selected men

who were lifting all sorts of heavy loads, and found that it would give the greatest satisfaction. The idea of the truss is to allow of the body motion, a constant wavering of the pad over the ring.

Dr. W. J. Gibson spoke of the difficulty of supplying patients with proper trusses. Dr. McKay's truss is devised to prevent the excoriation of the skin.

A Peculiar Gynæcological Case. Dr. Harrison. Selkirk, Ont.—The subject of this case was a woman of considerable family. Having become pregnant again—two and one-half months—she was advised by a neighbor to produce an abortion, as it was a very easy thing to do and no trouble arose other than from an ordinary monthly sickness. A glass stylet penholder was passed blunt end foremost which slipped from the woman's grasp and was lost to her touch. On examination the Doctor could find no rent or tear of any kind either in the vaginal walls or in the walls of the uterus Even after putting the woman under chloroform the stylet could not be found. The woman was most positive that it was there and that it had been passed blunt end foremost. An exploratory abdominal operation was performed, and the stylet was found in the region of the spleen with the point almost impinging upon the diaphragm where the heart lies on that muscle. The woman recovered with nothing worse than a stitch abscess.

Dr. Powell cited a similar case where a knuckle of intestine was found protruding through a rent in the anterior wall of the uterus. The woman died, however, in that case.

Dr. Roe, Georgetown, Ont., asked if the woman had aborted.

Dr. Harrison thought so.

Dr. J. F. W. Ross spoke regarding perforations of the uterus that give rise to practically no symptoms. He instanced three cases seen recently in practice in which with well-marked rupture of the uterus, there were no symptoms of collapse.

Dr. E. E. King thought that the stylet in Dr. Harrison's case had never gone into the uterus at all.

Dr. Harrison throught that the pen had passed through the fornix, but he could see no rent whatever in the vaginal wall.

The Seminal Vesicles in Health and Disease.

Dr. E. E. King, Toronto, described this condition as a pyo-salpinx masculinus. He exhibited a number of sections and specimens and said that this was a store-house as well as a secreting organ. He further described the normal condition and relation of the organs, and also their condition in enlarged prostate and in a previous gonorrhœa. He stated he had examined during the last week in the asylum, ten cases of chronic masturbators and in only one of these were the vesicles found exceedingly enlarged, The prostate was only found enlarged perceptibly in one case.

Dr. Primrose and Dr. McConnell discussed the paper.

A Note on Kocher's Method of Radical Cure of Hernia.

Femoral and Inguinal.—Dr. Primrose gave a very lucid black-board description of this operation and showed clearly how the inguinal pouches in the peritoneum were obliterated. As a guide in performing this operation, it was best to introduce a finger into the canal and cut upon the finger. Kocher recommends the silk suture in both operations.

Dr. Ferguson, London, Ont., discussed this paper.

Fibrinous Rhinitis. Dr. D. J. Gibb Wishart stated that several cases of this had occurred last summer in his own practice. In the text-books published this year, Lennox Brown and Walsham both state that it is a distinct disease from diphtheria, and that these cases need not be isolated.

Dr. Price Brown, L. L. Palmer, and Ingersoll Olmsted discussed at some length Dr. Wishart's interesting paper, Dr. Palmer instancing an outbreak of diphtheria following one of these cases, in a public institution.

Electrolysis and Cataphoresis in the Treatment of Inoperable and Recurrent Malignant Diseases. Dr. R. N. Frazer, Thamesville, Ont., read a highly interesting report of a case and its treatment. He said in this connection that he wished to report the history of a case in which apparently a favorable result has been secured after repeated failures He was not aware that any case had heretofore been reported in Canada in which a similar plan of treatment had been adopted, and went on to give the detailed history of the case and its treatment. It was a case of malignant disease of the right testicle, occurring in a married man, aged 40 years, with the history of a previous orchitis following ordinary mumps. After a prolonged bicycle ride, the testicle had become very much enlarged and the pain almost constant though not very severe. Aspiration had been performed several times and septic inflammation followed. A section of the tumor was sent to Dr. Caven, Toronto, who pronounced the case one of cystic sarcoma. The growth was removed. It was about the size of a walnut. Dr. Anderson, Toronto, said it was carcino-sarcoma. Dr. Frazer described at some length the manner of the treatment of the case.

On Some Points in the Diagnosis of Eye Affections.

Dr. R. A. Reeve read a very interesting paper with this title. He said this was important for the general practitioner as patients were continually consulting them with regard to defective sight, or stenopia or for actual disease of the eye. It was necessary in the first place for the general practitioner to know whether there was any disease present. As to trauma, whether any existed and to what extent was the eye-ball damaged. Was it in the fundus or the orbit itself. If a large magnet be brought close to the eye, pain is experienced owing to the fact that the foreign body is attracted to the magnet and injures the tissues. Then in some cases we have to determine whether there is a rupture of the

eye-ball itself posteriorly. He spoke of rupture by *contre coup* and also of luxation. For foreign objects, we should carefully scrutinize the anterior eye and the conjunctiva. He thought the time had come when the general practitioner should have a fair knowledge of the eye and be able to apply it. He should be able to fit the eyes with the proper glasses when required. Patients who can read 20/20 will bring ordinary print close to the eye. Here we should suspect astigmatism. Then there is a clue to be got by testing the tension of the eye. This will give you a clue to the presence of glaucoma. Another point that should be attended to is the testing of the field of vision, by closing one eye with the hand or using a watch glass. Diseases of the cornea and conjunctiva are to a large extent now capable of division bacteriologically. Be on the *qui vive* for tobacco amplyopia in case of cataract; and it is important to urge gentlemen over fifty to reduce the quantity of their tobacco.

MEDICAL SECTION.

Dr. J. Russell, Hamilton, Ont., was elected chairman of this section.

Ophthalmology and the General Profession.

Dr. G. H. Burnham read this paper, the object of which was to bring forward some of the diseases of the eye and also some disturbances associated therewith, which required early recognition in order to be successfully treated. He instanced acute glaucon a, chronic glaucoma, tobacco poisoning causing dimness of sight. In regard to the subsequent changes produced by an attack of iritis, he did not for these perform iridectomy, but instead of an operation gave his combined form of treatment, viz., mercury and the iodide of potassium internally, and pilocarpine hypodermically. He said his results were in this way much better than by an operation. In regard to diseases of the tear passage, he strongly recommended early treatment. He does not favor the employment of the largest probes and does not probe frequently, as good if not better results can be obtained without the additional suffering, which frequent probing is always associated with. He also spoke of eye strain causing so many nervous disorders, as headache, constipation and St. Vitus' dance, and of the great importance of having the sight tested by an oculist and not by those so-called "doctors of refraction."

Dr. G. S. Ryerson thought that the paper fully met the requirements of the subject. Ophthalmia neonatorum was however omitted. A large per cent. of eyes was lost from this cause. Medical men should take great care in cleansing the maternal parts before delivery and the eyes of infants later. Credé's method greatly reduces the percentage of this disease. One or two drops of a one per cent. solution of nitrate of silver could be dropped into the eyes. This is not too strong. In regard to the question of refraction; "doctors of refraction" or "doctors of ophthamology" was very misleading. He had tried to legislate against these men in the legislature and had approached the Government re these titles being used

unlawfully. The giving of glasses by laymen to the public has been long done; but these titles are very misleading to the public. The question of refraction was a most difficult and complex one, and how can these men on a few month's training undertake such work and treat such cases.

Dr. R. A. Reeve said that in the preventive treatment of ophthalmia neonatorum, bacteriological examination of any natural discharge is of great help. He also upheld the application of nitrate of silver or perchloride of mercury to eyes after birth. He also recommended protargol —2 per cent. to 4 per cent—as being painless and affective. The Provincial Board of Health should give instructions to doctors and maternities that Credé's or some method be used regularly. He referred to the question of refraction and the difficulty in dealing with it.

Dr. Burnham.—Only some points can be referred to in a short paper. He agreed with Dr. Ryerson and Dr. Reeve in regard to refraction, and thought the general profession negligent in the majority of cases.

The Insanity Plea in Medical Jurisprudence.

Dr. J. Russell, Hamilton, Ont., read a carefully prepared paper on this subject. He thought the public were beginning to doubt that the law was being properly administered in these cases. The question was of interest to the general practitioner as well as to the psychologist. It became every physician to acquire such a general and even special knowledge of the subject so as to be able to acquit himself creditably in the witness box, without bringing personal discredit upon himself or the profession.

Dr. T. F. MacMahon upheld Dr. Russell with regard to forming a competent commission to deal with insanity cases in law.

Notes of a Case of Torticollis.

Dr. D. C. Meyers, Toronto, presented a patient, a married woman, aged 39. The trouble came on at the age of 25 years, just after the birth of her last child. At that time she was very sensitive as to people looking at her. About three years ago first noticed head would turn voluntarily to the left shoulder, slight at first, in any position but the recumbent one. She is obliged to keep her hand to her chin to keep the head in position. The right sterno mastoid is prominent and much hypertrophied. Her neurasthenic symptoms have gradually disappeared. The treatment consisted in separation of the patient from her friends, Sweedish movements gradually increased, galvanism and the internal administration of the iodide of potash and salicylate of soda.

Acute Diabetes.

Dr. A F. McKenzie, Monckton, Ont., reported a very interesting case of this condition. It occurred in a young man of 21 years, a cheesemaker. He was passing about four times the normal quantity of urine,

of a sp gr. 1032. Continued slow pulse and sub-normal temperature were noted. The termination of the disease was fatal, through an intercurrent attack of influenza.

Treatment of Eczema.—Dr. Graham Chambers read a creditable paper on this subject. He thought the first step towards the successful management of a case of eczema is to make a thorough examination of the patient with the object of determining the etiology and the course of the disease. Bacteria no doubt take an important part in the etiology, There is one principle in the treatment of acute eczema, i.e., to give rest to the skin as completely as possible. Repeated washings with water are contra-indicated. Dr. Chambers uses externally a mild antiseptic sedative astringent lotion, a combination of black wash and calamine lotion, and recommends it very highly. The internal treatment is equally important. In the majority of cases there is some systematic disturbance. Rest of mind and body are sedative to the skin and should be secured. Confinement to bed is sometimes a great aid. Wine of antimony is a valuable remedy in subduing the inflammation of the skin.

Dr. Coventry upheld the internal treatment with mercuric chloride—1/64 of a gr. and calomel at times, dry, locally.

The Present Status of Ergot in Obstetric Practice.

Dr. K. McIlwraith, Toronto. read a paper with this title. Administration during pregnancy where there has been *post partum* hæmorrhage at previous labors. Given in small doses, t. i. d. in combination with strychnine, it delays the onset of labor and prevents the *post partum* hæmorrhage. In the first stage it is never given now. In the second stage to hasten lingering labor. Its advocates limit its usefulness to cases in which there is absolutely no impediment to delivery, even in the passage or in the size or position of the child. It must never be given in a primipara. These conditions exclude its use in most cases. It should not be used in p.p.h. in view of the trouble it causes with the secundines. Its routine administration throughout the puerperium retards involution instead of hastening it, and it diminishes milk secretion.

Dr. Roe.—The use of ergot has changed very much during the last 20 years. He used to give it when the head was on the perineum, and he never had any bad results.

Dr. Machell. Dr. McIlwraith has put the question very fairly. He has given both sides of the question. For the first stage ergot is never given now. In *post partum* hæmorrhage it is of very little use. For some years now, Dr. Machell had given no ergot at all. He thought that pressure on the fundus was the best.

Dr. G. Gordon. There is a tendency to go to extremes in this matter. If all was clear in the second stage and pains slow, he would not hesitate to give ergot.

Drs. Hunter, C. J. O. Hastings and Cruikshank further discussed the cases in which the drug is or is not indicated.

GENERAL SESSION.

A case of Coccidial Infection.

2. p. m.

Dr. D. W. Montgomery, Los Angeles, Cal, gave a clear description of this case. First there were general symptoms of the lungs simulating tuberculosis. The process went on for some little time—a few weeks—and then he got a disease of the skin which was well shown in the photos the doctor exhibited. The disease of the skin consisted of large tubercles which at first appeared as little maculae, then grew to be small tubercles, then large tubercles. These tubercles ulcerated and were covered with crusts, and when you would grasp one and squeeze it between the fingers, you could see that the inside was granular-looking like a fig. We examined some of his sputum but there was no tubercle bacillus to be found in it. The doctor took a piece out of one of the crusts and the first thing he struck was the small round bodies as shown under the microscope. These have a clear double contoured membrane and granular contents. Just exactly what these organisms are we do not know. Previous to this case two other cases have been reported. As far as the diagnosis of the disease is concerned from the symptoms alone, would be rather difficult. He came to the conclusion that it could not be iodide of potash poisoning—for these tubercles looked very much like the iodide rash—because the man had not been taking iodide of potash. We exclude the mycosis fungoides from the fact that there was no preceding erythematous stage nor such lesions on the body. He here exhibited a photo showing a case or mycosis fungoides. In this you can get an idea of the eczema of the hands and arms, and the tomato-like masses were well shown. There was no history of syphilitic disease. In one of Rexford's cases, the disease started in the lungs to later break out on the integument. What we call this micro-organism, we do not know. Rexford's cases were submitted to the best experts we have on these micro-organisms. We expect the disease will be fatal in this case. The disease occurs in a young German of twenty-one years, who came to California at three years of age.

Discussion in Surgery. Diseases of the Kidney Amenable to Surgical Treatment.—Dr. Christian Fenger, Chicago, read this paper. The subject was a large one, he stated at the outset. The origin of the surgery of the kidney was in 1869—thirty years ago. This new field of surgery developed rapidly as is well seen from a review of the literature, for instance from 1889 to 1899, what he called the third decade, no less than 800 papers have been published on this one subject. Within the last five years came the surgery of the ureter. It is represented in the literature for the last ten years by about ninety papers. We can divide the surgery of the kidney into two periods. The first ten years we can term the period of nephrectomy. During this term the loss of one kidney was not considered so much as a cure of the patient. This period did not terminate after this ten years but the dawn of the second period or the period of conservatism commenced; instead of nephrectomy, a

less radical operation to locate the disease, without sacrificing the tissue of the kidney at its beginning. In 1881 Hahn made a nephorraphy for floating kidney. But by far the most important step and one whose consequences have been most far reaching, covering the entire field of surgery, we owe to Henry Morris of London, who on Feb. 11th, 1880, had the courage to open up the healthy kidney tissue and remove an oxalate of lime stone from the healthy kidney by an incision through the renal parenchyma. No operator had had the courage to do this before, but from suppurating and distended kidneys which did not bleed when we cut through them. From Morris' important operation dates the possibility of the development of conservatism, which is pressing forward fighting its way, toward the goal of renal surgery, which is not the cure of the patient, but it is the preservation for the patient of the tissue that is valuable for secretion. Morris' operation has made it possible to save the kidney from the destroying influence of stone, to operate on the healthy kidney with a stone in it. In the third decade, the latest step forward in conservatism is the surgery of the ureter. It is a somewhat limited field. With the exception of ureterectomy for tuberculous infection which is only a small part of it, the whole of the field of the surgery of the ureter, has for its aim absolute'y nothing but conservatism of the kidney. It is a matter of vital necessity for any one who operates on the kidneys to examine the urine for the quantity of urea before any operating is done. There is compensatory hypertrophy of a healthy kidney when its fellow has been removed or destroyed by disease. The urine must be withdrawn and collected in sterilized test tubes. Examination of the urine must be made without delay, because urine changes rapidly by decomposition. There should be a chemical examination for albumen, blood and sugar. There should be a quantitative examination of the urine. We have got to know the quantity of the urea for twenty-four hours. The life of the patient depends upon that. Dr. Fenger spoke of the use of the cystoscope and the most important step in diagnosis, the last step, the step that gives us the final answer to the question, what the matter is, i. e., direct examination of the kidney through an incision in the lumbar region or the peritioneal incision. The lumbar method permits of much more direct examination of the kidney than the abdominal one. The peritoneal is seldom resorted to whilst the lumbar incision is the one in daily use. The essayist then spoke of the manner of controlling renal haemorrhage by compression either with the fingers or the clamp. If that does not stop the haemorrhage, it is sutured. Failing this we have to pack the opening of the kidney into the pelvis and trust to the compression of the gauze. Dr. Fenger next took up the different diseases of the kidney for which we operate and in a classical manner described each and the indications for and against operation. In concluding his very able and exhaustive paper, Dr. Fenger returned his sincerest thanks to the Association for the opportunity that had been extended to him to meet the medical gentlemen of the Province of Ontario.

Drs. R. B. Nevitt, I. H. Cameron and J. F. W. Ross discussed the paper and congratulated Dr. Fenger upon his highly classical deliverance.

GENERAL SESSION.

8.30 p. m.

Election of Officers:—

President, J. E. Graham; First Vice President, A. H. Wright, Toronto; Second Vice President, M. I. Breeman, Newburg, Ont.; Third Vice President, R. J. Trimble, Queenston, Ont.; Fourth Vice President, A. F. McKenzie, Monckton, Ont.; General Secretary, Harold C. Parsons, Toronto; Assistant Secretary, E.H. Stafford, Toronto; Treasurer, George H. Carveth, Toronto.

Dr. Wm. Britton presented the report of the Committee *re* Health Public and High School children.

In connection with this report it was recommended:

1. That the number of subjects of study prescribed by the Education Department, be lessened.

2. That home work be curtailed.

3. That less exacting examinations be imposed on the pupils.

4. That more time during school hours be devoted to physical culture.

5. That trustees should confer with members of the medical profession, as to lighting, ventilation and capacity of school rooms.

6. That the curriculum generally should be framed with full consideration of the paramount necessity for preserving the physicial health of the rising generation.

The report was adopted.

Re Hospital Abuse.

Dr. W. J. Wilson read the report of the Committee appointed for this purpose. Your Committee find on investigation as follows:—

1. The general tax paid by the public for medical and surgical attendance is dwindling and the willingness of the public to be pauperized increasing.

This is due mainly to the mode of management of the hospitals and the operation of "The Charities' and Public Health Acts," under which $110,000.00 is expended in a per capita rate on the hospital alone. Successive changes in the law tend towards the socializing of the profession and the curtailing of the domain of the private practitioner.

3. Particular instances of the evil are as follows:

(*a*) Out-patient departments so far as we can find out with only one exception are in the habit of handing prescriptions to the patients who carry them away and frequently hand them around among their friends.

(*b*) The Emergency Hospital of Toronto is being utilised at practically no expense to the patients, for daily accidents of all kinds which, till this hospital began operations invariably went to private practitioners.

This we find to be a direct violation of our Code of Ethics, Art. V Sec. 8.

Therefore your Committee begs leave to suggest:

1. That the Committee on Legislation be requested to present to this Association at its next meeting a review of the operation of "The Charities' and Public Health Acts," and their effects upon the status and emoluments of the profession.

2. That the Committee has confidence in both the ability and the willingness of the various hospital boards to remedy the evil complained of, particularly after attention has been directed to specific instances of what your Commiltee humbly believe to be wrong.

3. Your Committee recommend that it be made a rule in all hospitals that no patients be entitled to free treatment whose hospital maintenance is provided for, (including society patients paid for by lodges) except as an act of charity.

4. That all prescriptions in the out-door department of our hospitals and of the various dispensaries be kept on file and not taken away by the patients.

5. That emergency hospitals should simply render "first aid" and relieve the patient until his family physician or substitute arrives when the further care of the case is handed over to him unless it be a case which will receive a municipal order when it is to be treated by the usual hospital staff.

6. That the sending of accident cases by wealthy corporations and especially when there is an accident insurance carried on employees be carefully looked into and any abuses remedied.

This report was unanimously adopted.

Dr. E. J. Barrick presented the report of the Committee dealing with the consumptive poor which was adopted.

Dr. William Oldright presented the report of the Public Health Committee in regard to the treatment of inebriates which was adopted.

The Treasurer and Secretary presented their reports.

Motion for adoption; carried.

Dr. G. B. Smith presented the report of the Committee on Necrology: Drs. Patullo and H. H. Wright, Toronto; H. P. Wright, Ottawa; J. H. Mullin, Hamilton; William Younker, Belleville.

The usual *honoraria* and votes of thanks were then passed and the meeting adjourned to meet in Toronto in June 1900.

HYPNOTIC SUGGESTION AS A PRACTICAL AID TO MEDICINE.*

BY J. MADISON TAYLOR, A.B., M D., PHILADELPHIA.

It may be time to claim that hypnotic suggestion, in its lesser degrees, is earning a modest place as an auxiliary to practical medicine. How high this may reach in the esteem of reputable physicians depends largely on who shall experiment with it and how fairly they report their findings. When once the subject shall be purged of the atmosphere of humbug, which has been so liberally and so easily thrown around it by sensation-mongers, be they commercial, scientific, or dilettante, then good men, honest physicians, and sincere petitioners for accurate conclusions can proceed to give it sanction or make proper use of the impressionable states thus induced.

The province of hypnotic suggestion is to reawaken or develop latent or deadened powers already existent in the consciousness.

When the dangers of hypnotism are referred to, which is indeed the first question usually asked, I reply that there is a serious one which makes me pause, and that is the obvious peril to the operator of being branded as a charlatan. There are others, too, though careful observers find few, and those easily foreseen and forefended and not to be expected in the hands of reputable physicians, to whom alone the matter belongs, excepting, of course, skilled psychologists, but they were safer to have a medical colleague in their work. The second question which usually arises is whether the artificial induction of states of suggestibility does or does not impair the will or disturb volitional control? This is answered in the negative by the experiences of recent and temperate writers. Most instances quoted of morbid susceptibility to suggestion and perturbation of the normal power of control are probably only where the subjects are of defective or unstable nervous equilibrium, and who are, therefore, overreadily susceptible to silly or evil suggestions, however or by whosoever offered, of which the ranks of society supply so many pitiable instances. Upon an individual with inherently foolish or criminal tendencies it is distinctly possible that unwholesome suggestions can be made to develop into overmastering impulses, through which may ensue serious consequences. There is little, happily, on record to show that this possibility is formidable, and it is certainly not frequently operative in this connection one whit more than, if as much as, along with other remedial measures. Nothing can be worse than blundering, ineffectual medical measures repeated in dismal routine on those who are of the material of which cranks and hypochondriacs are made. Undoubtedly acts of folly may be suggested by many agencies and associations, and these can be finally performed; but it remains to be proven that hypnotic states, in the hands of reputable physicians, accentuate this or afford special direction. These foolish finalities are not necessarily of evil repute judged alone or at first sight.

* Read before the County Medical Society, February 22, 1899.

My own experience in the use of hypnotic suggestion is confined entirely to efforts at relieving morbid states where other measures faithfully tried have either failed or effected little or required too much of time and money to be employed. Long, isolated rest in comfortable surroundings and the constant wise admonitions of the neurologist offering the combination of object-lessons, relaxation, nutritive forcing, and constant direct suggestion will most assuredly work large miracles, as those of us brought up in the influence of the Orthopedic Hospital know of our own knowledge and experience. Too often these conditions cannot be secured. Hypnotic suggestions in my hands have often done what has not been done after these measures have been amply tried.

Why one man is permitted to succeed with this form of suggestion where others have failed I do not know; but so it is, as is true, indeed, of other forms of remedial measures. I have been able to accomplish with this agency what others had not, and doubtless yet others may succeed with my failures if only they are sufficiently patient and persistent. Half-hearted attempts lead to little. It is much easier to write a prescription and turn a troublesome case over to isolation and a nurse, masseur, and "the great healer, time."

I have never seen professionals and exhibitors in this art, and only a few physicians, who taught me little other than the fact that thoroughness and tact can be made to effect great things. This paper is founded on my own clinical experience, which I hope to have amplified as I learn more of the psychologic side of this most interesting subject.

A great stumbling-block to accepting the results of hypnotic endeavors is the fact that such simple and diverse methods bring about such potent findings. When this is reconciled and explained I for one can feel encouraged to go ahead with fuller confidence.

My method is the simple one of securing the full consent of the patient after ample explanation of the object to be obtained, then to state that several attempts may be necessary to induce the complete quiet and relaxation of mind and body in which the suggestions for betterment are to be planted. I then fix the attention in some way, continuing the suggestions as to the stages of quiet to be expected, and finally close the eyes by a touch of the hands, repeating the suggestions and any special ones needed, and finally begging for co-operation. Of course difficult cases require more time and patience and often some bizarre display. I have consumed six weeks, a half hour or more each day, to get a hysterical spasm relaxed. Boundless patience is often required, much more than many operators seem willing to give.

Why, then, is a person influenced more powerfully under hypnotism than in the normal state of attention? It is to be hoped this question shall be answered by psychologists in such fashion that the physician can comprehend and use it. My own impression is that whereas in the every-day state of a person who seeks medical advice and who avowedly listens to our counsel, many factors enter into and impair the attitude of attention and acquiescence they vouchsafe both as to degree and kind.

The human ear is presumably devised as an avenue of information and conviction to the brain and consciousness, but too often it seems only to fulfil the purpose of listening for a pause in the flow of admonition, so that the tongue of the petitioner may secure an opportunity to give itself voice for reply. The normal state of consciousness is complicated by many disturbing factors, some normal, such as are caused by many varying phases in the life of relation; some abnormal, such as outgrow from vicious mental habits (which invariably exist in all prolonged instances of ill-health); some are due to the inherent faults of our symmetrical powers and development in the higher intellectual planes. If this foggy atmosphere can be removed, allowing of a direct relationship, rapport, between the subject and suggester, a more perfect impress can be made upon the receptive faculties, the latent powers of thought, action or control can be awakened, strengthened or guided. Willingness is to be assumed (this is again of varying degree), but co-operation must be secured and to the point of active impulse and power for sustained action. Faith in the operator is most helpful also.

Frequently a masterful denomination is sufficient to effect miraculous results. Many successful physicians employ this forceful suggestion with glowing success. Too often it fails for a variety of reasons, the chief of which is inadequate will-power in the subject and disinclination to change the state of indolent hypochondriacism usually present.

Before realizing the utility of hypnotism I, too, wrought a few miracles (among many failures), of which the following instance is a type: An elderly spinster, living at ease in the house of relatives dependent upon her income for support, became gradually paralyzed and had been for years bedridden. She presented a cheerfull well-nourished appearance, and I could find no evidence of serious derangement. My time was limited by train intervals, so after assuring her she was able to walk I cleared the large room of furniture to the farther end, seized her portly person in my arms, and, accoutred as she was, carried her to the remotest corner and propped her up there on her legs. I then ordered her to walk back to her much-esteemed and comfortable bed. Of course there were tears and "winged words," then an ineffectual effort, then a fall of the easy, sink-down sort common to hysteric cases. Next prayers for mercy, finally dignified rage, and a final and spectacular rush across to the desired haven. Again I placed her, this time struggling bravely, in the same place. Language high and fierce followed, but a second and better race was run. My third attempt nearly met with defeat; the lioness was roused, but ultimately success complete and permanent met my efforts.

This is direct and dominant suggestion, not always, of course, feasible or diplomatic, however efficacious. It shades off too many graduations and is in common use and wide repute.

The mysterious modifications in mind of mortal man wrought by artificially inducing drowsy states offer, apparently, the best means of reaching far back into the recesses of the consciousness and readjusting

the machinery through which thought and action is initiated and carried on. Where the processes have suffered disabling derangements (providing the structural damage is not too great as well) most gratifying and surprising repair can oftentimes be accomplished. If, by the same token, evil direction can be given to wholesome but entangled forces, so much the more is it necessary to confine such spiritual control in the hands of responsible and skilful guides.

The possibilities of relief through hynotic suggestion may be enumerated to consist in the restoration of disturbed or depraved function; the removal of false impressions upon the conscience (themselves constituting grave disabilities, or again these may complicate disordered structures); the correction of bad appetites or tendencies; the restoration of self-control and the relief of painful states. It is also valuable as a means of differential diagnosis. This is perhaps its largest field.

Who are those most readily influenced by hypnotic suggestion? The impression has gone abroad that hysterical folk of unstable nervous balance are more susceptible. This is not my experience. A fundamental requisite in securing hypnotic drowsiness is a capability to obey and to fix the attention. Nevertheless, it is among those of unstable nervous equilibrium that loss of functional control is most common; hence clinically our experience is likely to lie chiefly among these. Wherever there is long-protracted ill-health there comes impairment in other organs besides those directly affected, and these often suffer serious derangment. It is a matter of practical importance to bear in mind, when estimating how much of good can be expected in a given case, that even though there is a basis of structural damage so much of relief can be secured by eliminating these complicating physical factors that results will amply justify our best endeavors. For instance, I had a case of torticollis which, along with domestic troubles, ovarian disease, and the dismal array of invalid habits, wrought a miserable picture. The case was referred to me by the gynecologist who removed the diseased ovaries, and I was able in time to dissipate the neurotic symptoms, leaving a moderate and endurable wry-neck and a fairly healthy and happy woman.

I do not believe so much could have been accomplished without repeated hypnotizations. Certainly, ten years of opportunity had been employed by eighteen prominent physicians of this city and elsewhare to little purpose.

Again, insomnia frequently adds distress to the victims of depleted health due to grave conditions. The lever of hynotic suggestion, coupled with compulsory sleep and the direct admonition to sleep constantly for eight hours, has frequently, in my hands, put away the source of suffering and impediment to gain in nervous vigor. Oftentimes the lack of sleep is not realized to be the chief source of exhaustion among more obvious ills. When this is cured, as can be done better by this means than by drugs, one opportunity of gain is immediately opened. Other restorations of function are thus secured. Hysterical paralyses, only too common, are repeatedly overlooked by the best, at least the most prominent,

neurologists. To relate my experience in this direction is not expedient, in print at any rate. It is quite true these hysterical paralyses, like other disabilities due to the protean malady, are prone to relapses. They are worth striving with, however. If by this means a breadwinner is restored to his family it is certainly something gained. Such has been my privilege several times. One case required daily séances of half an hour or more for six weeks before it yielded, but the success was complete at last.

In the removal of false impressions upon the consciousness the field of hypnotic suggestion is enormous, and needs only a reference. Fixed ideas, morbid impulses, and inertness of initiative are only too common in the practise of most physicians, and will not down at their bidding, and the wise men often fail to correct these, though they rarely mention the fact. Then the patient is liable to go from hand to hand seeking relief.

Protracted ill-health inevitably produces misconception of self and its needs, duties and privileges. The springs of action from frequent interferences discharge irregularly, and central agencies, volition and normal inhibition become palsied or dead, and from them arise a wide array of morbid fears, impulses or apathetic states.

Again, a most potent adversary to the well intentioned physician is the malignant damage wrought upon the volition of the patient by previous half-hearted, ill-judged, or, at any rate, unsuccessful efforts at repair on the part of physicians. Each failure furnishes the patiant with a lot of rubbishy half-knowledge, which is misappropriated and misapplied to his own case, breeding suspicion and blinding him to the value of the fundamental principles of medicine. To urge upon such sufferers "to use their own will-power," unless accompanied by the nicest explanations and boundless sympathetic help, usually ends in frantic strains and helpless agitation, and results in worse than failure. Here, to wipe out all these irritating mists by rendering the mind blank for an hour or two a day, and in these receptive silent periods to succinctly and clearly define what must be done, is not only an intense relief, but a great economy of time and strength. And it is the element of economy served by hypnotism rather than by direct suggestion which I beg to keep in mind. Other measures may serve, but at much greater length of time and suffering.

The correction of bad habits, vitiated appetites and evil tendencies is likewise a large field and peculiarly the province of hypnotic suggestion. Instances of these defects, which have resisted all rational measures and ample, well-directed persuasion, will sometimes succumb to the hypnotic influence. While it is true that there may be those able to hold the attention and sway the impulses directly, many instances are to be found where individual co-operation is too weak or other causes prevent, and these are vastly more amenable to this agency. Who, for instance, can by the subtlest argument and tenderest sympathy induce a spasmodic tic to cease? Under hypnotism this is often accomplished, though on confirmed old cases it is not so easy. Stammering is occasionally amenable to this

treatment in cases free from mechanical or mental defects. A friend of mine, himself a professor of psychology, was thus cured by Dr. Osgood of this exasperating speech defect.

Exaggerated appetites, as for alcohol, tobacco, opium, or other narcotic drugs, are thus frequently controlled. To those who sneer at the value claimed for hypnotic suggestion I would reply that if no other one thing were capable of accomplishment through hypnotism, but this one thing, if only a fair proportion of drunkenness, controllable in no other way, could be thus redeemed, it should be joyfully extolled. And much evidence is growing that great results are possible and infinitely more can be done in this department. I enjoy the greatest satisfaction in contemplating certain cases of valued friends thus rescued from alcohol and morphine, comforting me in many and varied defeats. Alcoholics are particularly susceptible to hypnotic influence and usually more than will-to co-operate.

The mental depression, the disgust with themselves, or it may be the apathy or discouragement, and, above all, the thirst for drink, pass quickly in my experience and that of a number of reputable observers. These states usually return in varying degree, but generally in lessened persistence and force. True dipsomania, or an inherited drink habit, is, of course, a far more discouraging matter. Relapses will occur, often serious ones, and the subject needs to be kept under patient observation for lengthening periods, perhaps always. My cases usually do so voluntarily, and the matter is too important to omit any reasonable precaution.

For the relief of many painful states, headache most commonly, neuralgia of various lesser sorts, even for the results of injuries at times, it is a matter of common knowledge that normal suggestion does much if judiciously applied. This failing and before drugs are used, especially the hurtful ones, and a few are altogether free from this possibility, hypnotic suggestion is curiously effective. It is frequently possible to so deaden sensibility that minor operations can be painlessly performed, notably by dentists, and also the process of parturition rendered more comfortable.

In brief, it may be claimed that is any physician will scan his clientèle he will find some, it may be many, folk who suffer from various disturbances of a most distressing kind, which have resisted excellent care and treatment, and have become a despair to himself and them. A far proportion of these can be relieved or cured by hypnotic suggestion.—*Univ. Med. Magazine.*

AUTHOR'S ABSTRACT ON THE PREVENTION AND TREATMENT OF CANCER OF THE UTERUS*

BY A. LAPTHORN SMITH, B.A. M.D. M.R.C.S. ENGLAND.

Fellow of the American and British Gynecological Societies; Professor of Clinical Gynecology Bishop's University, Montreal; Gynecologist Dispensary; Surgeon in Chief of the Samaritan Free Hospital for Women; Surgeon to the Western General Hospital.

In the author's opinion cancer of the uterus is not a hereditary disease because in more than half of his cases the family history was absolutely free from it for three generations back. This may shock those who have been brought up to believe in the tradition of its heredity, just as it did those who believed in the heredity of consumption when they were told that it was a contagious disease as every one now admits it to be. Cancer of the uterus has been proved by numerous experiments to be a contagious disease probably due to a microbe which does not flourish on healthy tissues but which luxuriates on tissues of low vitality, such as cicatrious, or on women whose whole vitality is below par.

ITS PREVENTION.—The author has noticed that it is frequent and increasing in countries were little or no attention it said to laceration of the cervix while it is becoming quite rare in countries where these lacerations are promptly repaired. The author makes it a practice at his clinics and hospitals to repair every lacerated cervix that comes before him with the result that out of over five thousand cases of which he has a complete history, there are at present less than twenty-five with a marked laceration unrepaired. If we believe as Ferrett has conclusively proved, that cancer of the cervix almost always begins in the cicatricial tissue in the angle of the wound, then by removing the cicatricial tissue and repairing the laceration we would put a stop to this dreadful disease. Moreover if it is contagious, as it must be if due to a microbe, physicians and nurses shonld take greater precaution to disinfect their hands after touching a cancerous patient. The author knows of three cases of cancer occuring in nurses attending patients who died of cancer and there was no trace of cancer in the family history of any of these three. When its contagiousness is more fully recognized it may yet be possible to stamp it out by isolation of the patients.

ITS TREATMENT.—If the disease were always detected early while still limited to the angle of the tear or to the mucous membrane of the uterustetal extirpation would in most cases be followed by cure. Unfortunately the majority of these women do not consult their family physician during the early stage; while in the cases in which he is consulted in good time he often fails to recognize the disease or else he fails to do the right thing promptly, viz. to send her to a specialist for vaginal hysterectomy. If the hundred thousand physicians on this continent would each make one hundred and fifty mothers understand that irregular hemorrhages at the change of life are not natural but on the contrary constitutes one of the earliest and strongest symptoms of cancer, then

* Read before the American Medical Association at Columbus, Ohio, 6th June, 1899.

vaginal hysterectomy would be performed much earlier and the results would improve in proportion. Provided that the organ is freely movable, even if the disease has invaded the whole of it, vaginal hysterectomy with ligatures giving good results. If less movable the clamp method is more feasible. If firmly fixed and the disease has extended to the broad ligaments the author prefers to make a thorough curetting and apply pure carbolic acid freely to the mucous membrane and then to perform Schroecer's amputation of the cervix. Before closing up the flaps it is well to sear them lightly with the cautery to destroy the microbes. This has in the author's experience prolonged life from two to five years. In all cases care should be taken to disinfect all out surfaces.

THE BACTERIOLOGY OF INFANTILE PNEUMONIA.

In a recent number of the *British Medical Journal*, Dr. James Carmichael in an article upon pneumonia speaks particularly of its etiology, and summarizes in an admirable way our knowledge of its bacteriology. He believes with other modern authorities that acute pneumonia, whether in the adult or child, properly belongs to the group of infective diseases, and that it may be produced by a variety of infections is proved beyond dispute. The various micro-organisms during their growth and development give rise to toxæmia, as evidenced by well-marked pyrexial symptoms, which have a more or less sudden onset and termination by crisis or more or less rapid lysis. Not infrequently the constitutional symptoms are out of all proportion to the local lesion in the lung.

The bacteriology of acute pneumonia is especially referred to as disclosed by recent investigations. Valuable information is afforded from the researches of Netter, Durck, Mosny, Meunier, Darier, Grancher, and others, which demonstrate that a number of micro-organisms are met with in this disease. These micro-organisms may be single or multiple whether in the primary or secondary pneumonias. In the primary pneumonias of the fibrinous variety, Friedlaender's coccus or pneumo-bacillus, or Fraenkel's capsuled coccus, are the predominating organisms; the streptococcus or staphylococcus being also found in a minority of cases. In primary catarrhal pneumonias one or other variety of pneumococcus may be found alone, or streptococcus alone, or these two organisms combined.

In the secondary pneumonias of measles, diphtheria, influenza, pertussis, tuberculosis, in addition to the organisms peculiar to these diseases, the streptococcus is frequently met with, more rarely the pneumococcus. Bacteriology thus shows that acute pneumonia is in no sense a specific disease as produced by any special organism.

The author concludes by quoting the words of Grancher, who, in his recent treatise, says, "The bacteriology of broncho-pneumonia is very complex . . . depending on numerous pathogenous organisms, for whereas fibrinous pneumonia is associated almost invariably with the pneumococcus, catarrhal pneumonia is produced by a variety of infections."

TORONTO CLINICAL SOCIETY.

The fifty-third regular meeting of the above society was held in St. George's Hall, Elm St., on Wednesday evening the 13th inst, at eight-thirty p. m.

The president, Dr. Grasett, occupied the chair.

Fellows present: Davison, W. H. B. Aikins, J. O. Orr. Badgerow, Parsons, Lennan, W. J. McCollum, Hillman, Spencer, Chambers, E. E. King, Budolf, Boyd, Chas. Temple, Small, Pepler, H. B. Anderson, Silverthorn, Bruce, Peters, Nevitt, Trow, Macdonald, Greig, Wm. Oldright, Bingham, Thistle, Primrose, George Elliott.

Visitors: J. F. Uren, W. J. Wilson, H. H. Oldright, King Smith.

Nominations for fellowship: Drs. J. F. Uren and King Smith, by H. A. Bruce, W. H. B. Aikins and H. A. Bruce and G. W. Badgerow, respectively.

Nomination of Officers for 1899-1900.

President, Dr. George A. Bingham; Vice-pres., Dr. W. H. B. Aikins; Cor. Sec'y., Dr. G. Boyd; Rec. Sec'y., Dr. George Elliott; Treasurer, Dr. W. H. Pepler; Executive Committee; (Five to be elected.) Drs. A. B. Anderson, George A. Peters, E. E. King, H. A. Bruce, G. Silverthorn, J. T. Fotheringham, A. Primrose, A. A. Macdonald, W. B. Thistle, B. Spencer and Geo. W. Badgerow.

Cryptorchid. Dr. Jno. L. Davison read short notes of this condition, and presented the patient, a boy aged 17 years, for examination by the fellows present. He said the literature was rather meagre on the subject with the exception of Heath's Dictionary of Surgery. In the first place, regarding the question of super-numerary testicle, that they did exist was a fact, though some authorities say that a third testicle had never been actually proven. When such cases exist, there are also other marked sexual deformities.

The penis was decidedly infantile; the epididymis may be found in the scrotum, though partly developed and the rest of the testicle represented by a small mass like a pea without any particular structure. In these cases the vas deferens may be absent; the secretion cannot reach the urethra. It may be due to delayed descent if the testicle is not found in the scrotum at birth. It sometimes comes down and makes its appearance at puberty, and then there is always a hernia. It may be a question whether the case is one of complete absence of the testicle, an anorchism, or one of cryptorchism.

Dr. E. E King in discussing the case, though it one of undeveloped testicle, and was satisfied he could feel the chord on both sides. On the right side he could make out a mass the size of a small bean. He thinks as the patient grows older the organs will develop.

Dr. Davison further stated in cases of this kind where the testicle is in the inguinal canal or in the abdomen, if it is pressed upon for any length of time, it is very liable to take on malignant disease.

Dermatitis Herpetiformis. Dr. Graham Chambers presented a patient with this condition, a woman between thirty and forty years of age. The name Dermatitis Herpetiformis, he stated, was first applied to the disease by Duhring in 1884. It is a very chronic disease and in fact almost incurable. Itchiness is very pronounced; and the lesions are always grouped and have an herpetic appearance, being irregular in form. Occasionally you get one case with one kind of lesion and sometimes you get all the lesions together. The disease in this case first made its appearance about fifteen years ago. Previously she had been very nervous, so marked at times that she was unable to walk without assistance. Lesions were on the scalp and on all parts of the body. The patient states the legions are smaller at the present time than at the commencement of the disease. The lesions are frequently found in groups on the face, neck, trunk and upper extremity, and there is no tendency to symmetrical arrangement. The vesicles increase rapidly in size but rarely become bullae They rupture and moist mucous surfaces form, increase in size and small vesicles form around the pariphery. Pustules seldom form. The angular outline to the vesicles is similar to Herpes Zoster. When the lesions heal, erythematous patches remain and some of these show cicatrices. Itching, burning and pricking sensations are nearly always present and the patient frequently feels these sensations in parts unaffected by the disease. She can tell the outbreak of a new lesion by pain in the region of the liver. In answer to Dr. Pepler as to his treatment in this case, Dr. Chambers said he had only had one case before this one. That case got better but he was not so sure that she did not suffer a relapse. A form of the disease sometimes occurs in pregnancy. As a rule the disease is not fatal but so far as he knew very few cases have been completely cured. The treatment employed in this case has not improved the patient to any great extent. Morris speaks of antimony. Wine of antimony was being used in this case and it was proving very beneficial. In papular eczema you will nnd that wine of antimony acts very beneficially. You may use any drug that will relieve the itching but of course it would be only palliative. Locally in this case he had used 2% sulphur ointment. The disease is undoubtedly a neurosis and the treatment should be constitutional.

Dr. Chambers also presented two patients with Favus, in one of whom the disease had existed for eight years and in the other three. The mousey odor was not very well marked in either case.

Multiple Angioma. Dr. H. B. Anderson presented a boy in this condition, aged fifteen years. In regard to family history, his mother had a few moles on her face; and his grandmother had worts about her neck and face. The patient is strong and robust with a heavy facial expression and brownish birthmarks on the head and nose, not raised. At about nine months a small tumor appeared in the right lumbar region and has gradually enlarged, and other small tumors on different parts of the body. About six years ago, brownish mottling of the skin appeared, and also on the chest. At times they become red. The surface of the larger

ones is covered with fine hair. One on the shoulder has an uneven surface, easily indented. All have wide bases; and there are many nodules felt, invisible to the eye. The left breast is diffusely enlarged. The lower ribs prominent and bulged outwards and a deep depression is seen in the lower sternal region. The condition appears to correspond more to moluscum fibrosum with brownish pigment moles and enlarged sebaceous glands, some of them being vascular enough to suggest an angiomatous condition. Microscopically, Dr. Anderson thinks the tumors would show fibrous tissue with dilated blood spaces. Some authorities say they really rise in the connective tissue of the nerve sheaths. That is the view generally held at the present time. In some cases there have been as many as three or four thousand covering all parts of the body. Others classify these under fibrous tumors, but Senn says they are infective. They are as a rule congenital, being present at birth but continue to grow afterwards for a considerable length of time. As to prognosis, they undergo involution in some cases. Most frequently after attaining a certain size the tumors become stationary. In some cases they may take on a sarcomatous condition and grow very rapidly. Defective mental development is usually found present, and there is also a tendency to deformities in different parts of the body. Dr. Anderson thought the neurotic origin was shown.

Vesical Calculi.—Dr. Grasett exhibited two vesical calculi, one of which was of a peculiar elongated shape slightly curved and about two inches in length. The first was from a man of twenty-five or thirty years. There was no previous history of any renal attacks. The patient stated that last spring without any of the ordinary causes that might produce cystitis, he was attacked with that disease. When first seen by Dr. Grasett he had an acute exacerbation with temperature elevated to 102 degrees. After the subsidance of the fever he was sounded and a stone immediately found without any difficulty. His physician in Japan had never sounded, although he had been under his care in the hospital for some time. In the patient who had the stone of peculiar shape, prostatic abscess had been at first diagnosed. Dr. Grasett stated he had tried lithotrity in this case, but could not crush on account of not being able to get the stone into the instrument. He described further how the stone had been removed by the lateral operation. It was partially encysted and occurred in a young man of some seventeen years.

Double Amputation of Both Arms at the Elbow Joint.—Dr. George A. Peters showed three specimens in which injuries to the fore-arms and hands necessitated amputation at the elbow joint. Two of the specimens were from one patient, a young man nineteen years of age, the result of a railway injury, in which both arms were crushed by the wheels. The right arm was removed soon after the injury. The patient begged very strongly to have the other saved and the surgeon promised not to do an amputation that night until his friends arrived. The right arm shows double fracture of the radius and ulna, the ulna being comminuted. The radius was broken at the junction of the lower and middle third of the bone. The apiphysis is completely separated from the

shaft; and there is also compound dislocation of the wrist joint. In regard to the right arm the skin was torn very badly. The surgeon was able in this case to amputate below the elbow, near to the joint and get a very good flap of skin and it healed by first intention. On the other arm the fracture was evidently not nearly so severe. The only injury to the skin were two openings. The point he wished to make with regard to the degrees of injury to the skin, is this, that in the left arm where the injury to the skin was less than in the other, the skin had been torn away from the muscles to a much higher level. The skin was dragged away from the muscles beneath, and was separated to a point above the elbow. In this arm he could not amputate below the elbow joint. He tried first, but found he had to remove it at the elbow joint. Even after that a portion of the skin sloughed and has since healed by granulation, so that he has a fairly good stump on that side now. The rule in regard to the amputation of such cases has been very forcibly exaggerated by Mr. Cheyne, of Edinburg. He says that in these cases of crush from heavy machinery, the rule should be to amputate above the part that you think will recover. The circulation in the left arm was excellent, with all the degrees of fracture and tearing of the muscles, tendons, etc., and the nerves were intact and the patient could feel all over that hand. There was no coldness and you could feel the pulse at the wrist; and yet under anæsthesia, the surgeon found, the skin was entirely separated and there was a great degree of laceration of the muscles. Is the circulation all right? Can the hand survive? Are the nerves all right? In both, these were present. It is quite possible the hand might have lived, but it would have been useless. The hand would have been stiff and a club on the end of his arm, and would have been useless. Another thing: During the process of recovery, provided one made an attempt to save the arm, one runs a great danger of sepsis and risk to life. The left arm, Dr. Peters amputated the next morning after the condition was found under anæsthesia.

The other cases exhibited by Dr. Peters, was the removal of the arm below the elbow joint in an electrical machine. Thinking the current was turned off, the electrician had passed his hand into the box or cylinder to perform some adjustment, when the piston came down and cut his arm off cleanly. It was as evenly cut as the end of a cuff. The skin had retracted some when seen by the surgeon. In this case Dr. Peters amputated high up and just saved the elbow joint. He first stitched the skin over the end of the stump in several directions and then proceeded to do a circular amputation and in that way he was able to go close to the elbow joint.

In regard to efforts to save the elbow joint, it is important to save the attachments of the muscles which pass down from the arm to the forearm, viz, the Triceps, Biceps, Anconeus and Brachialis Anticus.

Injury of the Fore-arm.—Dr. Nevitt showed a patient, a man about forty-five to fifty years of age, who had sustained an injury to the forearm with a considerable degree of laceration, and yet with good circulation through the vessels in the hand. The injury was a machine accident

and consisted of a compound dislocation at the elbow joint, and a double or a multiple compound fracture of both bones of the fore-arm. At first sight nobody would have said a word but that the arm must come off. When the elbow was reduced it looked very presentable, and finding the circulation good, Dr. Nevitt determined to try to save it. The injury to bones of the arm was very considerable, and the injury to the muscles. Exactly what the injury was, he was not prepared to say. The patient was here presented to the Fellows, and Dr. Nevitt said the condition of the hand and arm is there to show for itself, and the question is whether that is as good as an artificial arm.

Dr. Bruce, who had charge of the case during the illness of Dr. Nevitt, supplementing the data already given, said, four weeks after this accident was received, Dr. Nevitt had asked him to look after the case. At that time there was a sequestrum found, although it was present at the time of the accident. This sequestrum was about 1¾ ins. in length and was pressing between the ends of the bones The upper fragment of the ulna was bent over towards the lower fragment of the radius, and if united in that way there would be no movement in the arm; everything would unite in a mass. Dr. Bruce took a small section out of the radius and wired the bones into position so that the two fragments of the radius would be in contact with each other—and the fracture was oblique. At the time of making the incision, a mass almost the size of one's fist, issued out through the incision, and this seemed to be pulpified muscle with some old organized blood clot. When that occurred, the anterior surface of the radius appeared. At least three-quarters of the flexor muscles of the fore-arm were entirely destroyed. There were no muscles to act upon the tendons lower down. The tendons could be seen at the lower part with no muscles attached above. The sequestrum was a piece of bone broken off at the accident and not a piece which had sloughed off.

Drs. Wm. Oldright, E. E. King, A. Primrose, President Grasett, A. A. Macdonald, Thos. Millman and George A. Bingham participated in a very animated and interesting discussion of the cases

Replying to the criticisms, Dr. Peters said, in reference to the left arm, no one would deny that the skin would slough. The bones are gone and all the extensor tendons are gone. Some of the flexors are left. The tendons are there but the muscles are crushed, while the veins remain patent throughout, through the sloughing area; and in the meantime the man's life is in danger every moment. The mortality is much greater where amputation is not performed. Dr. Peters had no doubt in his own mind that the hand would have become gangrenous in the course of a few days, although the circulation was so good at the time. When swelling occurred, the inflammatory exudate would have choked the veins, and in a very short space of time the arm would have been gangrenous.

The discussion was adjourned until the next meeting in May.

The usual refreshments.

GEORGE ELLIOTT,
Recording Secretary.

THE USE OF MORPHIA IN BRIGHT'S DISEASE.

Few opinions are more firmly held or more dogmatically taught than that opium must not be given to patients with albuminuria or Bright's disease. The more extreme upholders of this doctrine teach that the presence of albumin in the urine, even when the kidneys are not diseased, as in cases of fever, prohibits the use of opium. Many years of careful investigation of this subject convince me that this opinion is wrong. I avail myself of this opportunity to again draw attention to this subject. Several writers in America and England have recorded their experiences that opium either by the mouth or hypodermically may be administered, not only without danger but with great advantage, to some patients with uremia. Dr. Loomis ("Diseases of Respiratory Organs, Heart and Kidneys," 1875) states that he has employed morphia hypodermically in puerperal eclampsia with marked success. He says that morphia may be given hypodermically to some, if not all, patients with acute uremia without endangering life. He states the almost uniform effect of morphia so administered is 1, to arrest muscular spasms by counteracting the effect of the uremic poison on the nerve centers; 2, to establish profuse perspiration; 3, to facilitate the action of cathartics and diuretics. He has given half a grain of morphia hypodermically to patients completely comatose, with uremia, with benefit. Austin Flint ("Clinical Lecture," *New York Medical Journal*, reported in *Medical Times*, April, 1880) states that uremic convulsions in connection with hard contracted kidneys are well treated with hypodmeric injection of morphia. There is no question in his mind, he says, that the administration of morphia in pretty full doses is of considerable service in quite a number of cases of uremic poisoning with nausea, tremor, impaired vision, etc. Roberts Bartholow ("Treatment of Diseases by the Hypodermic Method") asserts that in the treatment of uremic convulsions considerable doses of morphia are demanded; to an adult half a grain may be administered at once, and repeated so that as much as two grains may be injected within a few hours in severe cases. Stephen Mackenzie (*Lancet*, Aug. 3, 1889) reports some cases of uremia treated with hypodermic injections of morphia. One patient with paroxysmal dyspnea, with weak heart was relieved by one-sixth of a grain of morphia. Another case with breathlessness, irregular action of the heart and headache was greatly relieved by the same treatment, the patient obtaining refreshing sleep the first time for a long period. He has benefitted patients with renal asthma by hypodermic injections, also removed headache. He refers to two cases reported in the *British Medical Journal*, March 16, 1888, suffering from uremic convulsions, both of whom recovered after the hypodermic use of one grain of morphia. Robert Park (*Practitioner*, Vol. xxiv, 1880) recommends this treatment in uremic insomnia and orthopnea. Powell (*British Medical Journal*, 1885) injected one-twelfth grain of morphia into a child 6 years old suffering from uremic convulsions, due to acute nephritis, following scarlet fever. The convulsions subsided, there was no recurrence and the child recovered.

Osler writes concerning uremia, "for the restlessness and delirium morphia is indispensable. Since its recommendation by Stephen Mackenzie in uremic states, some years ago, I have used this remedy extensively and can speak of its great value in these cases. I have never seen ill effects or any tendency to coma follow." My observations entirely confirm these statements, and yet the use of morphia in Bright's disease is denounced with little less than horror by most practitioners, though they all confess that they have never tried it, that, indeed, they dare not do so Morphia hypodermically employed is of conspicuous benefit in the shortness of breath of uremia. This may be due to different causes. With some patients the compensatory hypertrophy gives way and they suffer from cardiac dyspnea, in all respects similar to that from valvular defects with insufficient compensations, notably, sleep in aortic regurgitation. The paroxysmal shortness of breath prevents sleep; on falling asleep they are soon wakened by distress of breathing. The patient is compelled to start up in bed, often throws his legs out of the side of the bed panting for air, or the sleep may be distressed and harassed by Cheyne-Stokes breathing. This distressing condition, whether due to deficient compensation, in Bright's disease or to valvular defects, is almost invariably relieved by hypodermic injection of morphia and several hours' refreshing sleep are secured, to the great relief and comfort of the patient, who on the following day is refreshed, takes and digests and assimilates his food better. Morphia can scarcely be too highly commended in such a condition, and although it does not cure, it delays the end and greatly lessens the distress of the declining days of life.

Uremic asthma, again, yields promptly to hypodermic injection of morphia. On the other hand, persistent distress of breathing may be due to dropsy, the lung being hampered by an abundant serous effusion into the cavity of the chest. I need hardly say that such a condition is not improved by the use of morphia.

The headache and sleeplessness occurring in uremic patients can generally be removed by the hypodermic injection of morphia. I have not given this treatment in uremic convulsions or coma, but I have largely used it in many cases of uremia with other troubles, and am sure that morphia may be given to such patients with every prospect of benefit and no risk of harm.

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Professeur à la Faculté de Médecine, Paris; Médecin honoraire des Hôpitaux; Membre de l' Académie de Médecine.

PARIS, 4th February, 1899.

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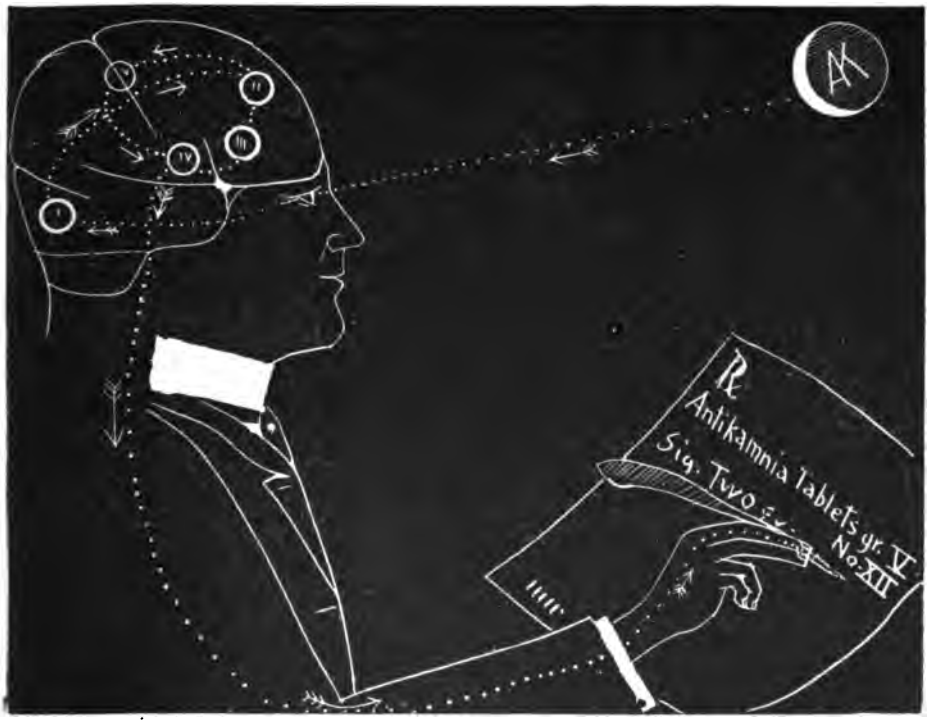

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EDITORIAL.

GREEN DIARRHŒA IN CHILDREN.

The heated term is again upon us, and we think a few words on the green diorrhœa of children may be timely.

No doubt every practitioner of experience has his own ideas of the disease, and of the best methods of treatment. There is much in the various works on the subject that is perplexing, and treatment varies within very wide limits.

The scientific classification of diseases of the intestine in children is, as we have said, perplexing; but each doctor has a mental concept of a disease, common in hot weather, but perhaps more frequently met with when the cold evenings of September come in.

The child runs down, has a capricious appetite and muddy complexion. The bowels are irregular, the number of motions varying from three or four to ten or twelve daily. The characteristic color is greenish or even bright green, though sometimes they are clayey. The musty odor is nearly always present, and the they contain considerable mucus, and even frequently streaked with blood.

There is more or less abdominal pain and straining at stool.

The patient from a firm, round-limbed child grows flabby, the muscles lose tone, the eyes are darker and lustreless, the breath heavy and offensive.

Sleep is restless, the disposition becomes very trying, and altogether though the patient usually gets well in time, both parents and physician are greatly exercised as to the result.

The plans of treatment suggested for the cure of the condition so widely outlined above are legion. Many of them we think are irrational and misleading.

And first as to diet. This is important, but we think undue stress is laid upon what may be called the stirilizing plan.

WHAT IS NECESSARY.—Pure milk, that is commercially pure milk, needs no stirilizing for healthy children, and we do not quite see the reason why it should need the process for those who happen to be ill. Plain, pure food, in small quantity is all that will be necessary in the great majority of cases. We shall say no more on the point as it is the treatment by drugs that principally concerns us at present.

All will agree that the alimentary canal should be thoroughly cleaned by a purgative, and for the purpose we still adhere to the old fashioned castor oil.

Now what shall we do to disinfect the intestines? The number of disinfectants for this purpose is large, including salol, salicylate of bismuth, beta naphthol, calomel (?) *et al ad infinition.*

The idea that Calomel is not antiseptic at all, till either part or the whole of it is changed into the bichloride, by the action of the hydrochloric acid in the stomach, seems to be correct. No doubt the action of Calomel upon the lines is due really to the action of the strong salt, which if experiments may be relied upon, alone possesses the chologogue action, so long ascribed to the mild one.

Now we know that gray powder has been considered one of the most useful of medicines in the treatment of intestinal troubles of children. Here again doubtless the whole curative action is one to the bichloride formed in the stomach. Looking at these points, we hinted at in this article, we came to the conclusion some years ago, that the bichloride pure and simple would be the best drug to use, for the reason, that with a disturbed condition of the stomach and its secretions, the amount of hydrochloric acid found there at different times would vary greatly, and consequently the amount of bichloride produced would also vary so that our medication with the milder preparation of mercury would be very uncertain.

Our experience fully justifies the statement, that no medicine with which we are acquainted can compare if efficacy with corrosive sublimate in the treatment of this form of intestinal trouble.

It is perhaps best prescribed as Liq. *Hydrarg Bichlor* from three to ten drops four times a day.

Change of air, fresh air, warm flannel clothing for the abdomen and extremities etc., are all useful adjuncts in the treatment, but the *sine qua non* is the bichloride.

OBITUARY.

MR. LAWSON TAIT, F.R.C.S.

With the death of Mr. Lawson Tait, Great Britain has been deprived of the most original surgeon she has produced in the last quarter of a century, and the whole world of surgery has to deplore the loss of one of the most gifted masters of the art. His was one of those exceptional

LAWSON TAIT, F.R.C.S.

minds that mark an epoch in the history of any science or art in which they occur. They are altogether out of the common, and for this very reason are often incapable of being understood by men of ordinary, or even above the ordinary, mental calibre. It is not in the light of what we designate clever and able minds that we regard such. We are forced to recognise in them gifts and powers entirely apart from those that are acquired by education, training, and experience. It is not with these that the "infinite capacity for taking pains" explains the brilliancy an

originality of their work, though it may enable them to develop and place it on a substantial basis. It is rather that subtle quality of brain in which conception and imagination play the greater part, and which, when allied to that other quality, audacity, which has been taken as another reading for genius, give to the world and humanity their greatest gains. Lawson Tait combined in varying degree all these qualities. Laborious and painstaking in his work, strikingly original in the ideas which gave it shape, characteristically audacious in carrying these ideas into operation and impressing them upon a too reluctant and unbelieving profession, he could not, and never did, expect to escape the jealous carpings, the unworthy criticisms, and the specious inuendoes which contemporaries, with no claim to his powers as a surgeon, or to his manipulative resources as an operator, were wont to aim at him. He has passed away, still a comparatively young man, at the age of fifty-four, having been born in Edinburgh in the year 1845. He was the son of Archibald Campbell Tait, a Guild brother of Heriot's Hospital, to which school Lawson Tait was admitted at the age of seven, remaining there until, gaining a scholarship, he entered Edinburgh University. From 1860 to 1866 he was engaged in his professional studies, and was under the guidance of an able surgeon, McKenzie Edwards, a favourite pupil of Sir William Fergusson. Here also he came under the influence and teaching of Sir James Simpson, and determined to pursue the branch of surgery that he afterwards adorned, which might be said then to have been in its infancy. In 1870 he became a Fellow of the College of Surgeons in Edinburgh, and a year later he took the Fellowship of the College of Surgeons of England. After a short time spent at Wakefield as house surgeon, he went to Birmingham, selecting this town as an appropriate field for the practice of that department of surgery which he had determined to follow. At Birmingham he took an active part in the origination of the Women's Hospital, in conjunction with Dr. Savage, in which institution he afterwards achieved many of his most brilliant successes. Here he did not confine himself to the pursuit of his profession alone, for he joined the staff of the *Birmingham Morning News*, then edited by Mr. George Dawson, and was appointed lecturer on Physiology and General Biology to the Midland Institute in 1871. Tait was but twenty-five years of age when he went to Birmingham, and three years before he had performed his first abdominal section. He was only twenty-eight when he obtained the Hastings Gold Medal of the British Medical Association, which was then given to him by Sir William Fergusson who made exceptionally complimentary remarks to the young surgeon on the unusual brilliancy and originality of his essay on "Diseases of the Ovaries," an essay which, written at a time when the pathology of the uterine adnexa had made but little advance, immediately drew attention to Tait and established his reputation as a pelvic surgeon.

It is not possible in such a notice as this to refer even to the most important of the advance in gynæcology in which Lawson Tait took so prominent and active a part. During the latter part of the seventies his fame had still further enchanced the reputation of the Birmingham

School. His writings on the physiology and pathology of the ovaries and Fallopian Tubes, on the intra-preitoneal method in ovariotomy, on tubal fœtation, and on the treatment of extra-peritoneal management of the pedicle by clamp added to his marvellous successes in ovariotomy, and abdominal surgery generally, had given him a world-wide fame. Not in pelvic surgery alone did his originality manifest itself. In 1879 his paper on "Cholecystotomy" was read before the Medico-Chirurgical Society, and appeared in its "Transactions." Various other original feats in abdominal surgery followed, and from different schools in America and on the Continent distinguished surgeons came to see his work and methods of operating. There was but one opinion as to his manipulative dexterity and deftness of hand, celerity, boldness, and completeness were the characteristics of Tait's operations. There has been, from time to time, doubt thrown on his statistics, but there is no ground that we know of whatever for questioning the accuracy of these. Some years since, during a painful episode of his life, when those of the Women's Hospital at Birmingham were impeached, he took immediate and unanswerable steps to verify them before the profession, and most satisfactorily did so. In his earlier cases of hysterectomy, when his mortality was very high, the disastrous results were published frankly and above board.

Tait's fame, however, most specially rests on his boldness in the treatment of diseased conditions of the adnexa by operation. Undeterred by attacks, and uninfluenced by hostile criticisms, he established the operation of oophorectomy as the surgical precedure for suppurative conditions of the ovaries and tubes in given cases of bleeding fibroma, and proved the necessity for immediate operation in ruptured tubal gestation—advances in gynæcology which were not achieved without much obloquy and unjust aspersion. He lived, however, to see the range of gynæcological surgery in these directions, and in justifiable operative procedures, pass far beyond the limits which he, in the earlier days of his advocacy, conceived that they would. With many other matters of pelvic surgery his name is associated. As, for instance, the treatment of pelvic abcess by abdominal section and drainage, and his operation for ruptured perineum. Lawson Tait was not what can be called in the modern sense an aseptic surgeon, and he held with characteristic obstinacy of mind to older methods of operation. He ignored Listerism, and refused to be a disciple of the great English teacher of antiseptic and aseptic methods. Here, as in his advocacy of the anti-vivisectionist movement, we believe that he was mistaken, and we cannot but feel that his results, brilliant as they undoubtedly were, would have been still more so had he adopted, as is now universally done, Listerian methods. By ordinary precautions of cleanliness, in conjunction with his great dexterity, Tait's results may be explained. We do not know how far those statistics might be modified by those of *all* operations he performed in private practice, but this has to be remembered, that if he lost at any time directly through the neglect of aseptic precautions, the price was a dear one to pay for his rejection of Listerism. His last communication (but a few weeks ago) to THE MEDICAL PRESS AND CIRCULAR, to which he has been a constant contributor

for many years, and to which lately he has addressed nearly all his original communications, shows how determined and honest was his opposition to vivisection. "Some day," he said, "I shall have a tombstone put over me, and an inscription upon it. I want only one thing recorded on it, and that to the effect *'he laboured to divert his profession from the blundering that has resulted from the performance of experiments on the sub human group of animal-life, in the hopes that they would shed light on the aberrant physiology of the human groups.'*" Alas! all too soon has the ruthless hand of death brought to an end a career which, at the time this was written, no one dreamed was so near to its conclusion.

Lawson Tait was an Honorary Graduate of several universities. In politics he was a staunch Liberal, and at one time thought of entering Parliament, but was defeated at the 1886 election for the Bordesley Division of Birmingham by Mr. Jesse Collings. Of late years he relinquished much of his practice, building for himself a residence at Llandudno facing the Conway estuary and the Penmaenmawr mountains, taking an active interest in the development of Llandudno, and only last month buying the Old Telegraph Inn, on the highest point of the Great Orme's Head, with a view of converting it into a sanatorium for consumptives.

Much more could be written and said of Lawson Tait, for his history has been also the history of British gynæcology for the last twenty-five years. We have aught to say to certain personal attributes which brought him many and relentless enemies. His best friends—and he had hosts of ardent admirers—would have often wished that in debate and in medical literature his attitude in scientific discussion were other than it was. This tendency doubtless cost him the loss of the highest professional and social distinctions, but he could always feel the internal conviction that the name of Lawson Tait would pass down on the roll of the great British surgeons who by their researches and work have been the milestones which mark for us and those to come the evolution and progress of British surgery. His death came rather suddenly after previous indisposition, at his residence, St. Petroks, Llandudno. The remains were cremated at Liverpool, and the ashes have been deposited, in accordance with his own special request, in a cave in his private grounds.

ETIOLOGY AND DIAGNOSIS OF CEREBRO SPINAL FEVER.

BY WILLIAM OSLER, M.D, F.R.S., F.R.C.P.,
Professor of Clinical Medicine, Johns Hopkins University, Baltimore, U.S.A.

In practice we sometimes meet with a meningitis which is not a sequel to pneumonia or ulcerative endocarditis, to ear disease or of injury, and which does not mark the terminal stage of a chronic malady. As the meninges of brain and cord are both inflamed the condition is labelled cerebro-spinal meningitis. When there are many cases we speak of epidemic cerebro spinal meningitis. Until recently my experience did not extend beyond the sporadic form of the disease. However, the recurrence of a small outbreak in Baltimore during the past year has enabled me to study certain points in this most interesting affection, and has thus determined my choice of a subject upon which to addre s you.

Of the special features of epidemic cerebro-spinal fever I shall speak but briefly.

First, it is one of the most fatal of all acute diseases, but fortunately takes a low position among destructive epidemics. It spreads slowly and attacks only a few individuals so that the general mortality may be but slightly increased. On the other hand, scarcely any known fever kills so large a proportion of those attacked. During the recent Boston epidemic, out of 111 hospital cases no less than 76 died.

Secondly, the outbreaks occur in epidemic waves, of which the fourth in the present century is now prevailing in the United States. For some years there have been local outbreaks in widely-separated regions, but in 1896, 1897, and 1898. a slight epidemic occurred in Boston, and in 1898 cases appeared in Baltimore and other towns. From a recent report by Surgeon-General Wyman we find that cerebro-spinal fever has prevailed during the past year in twenty-seven States.

Thirdly, among specific diseases cerebro-spinal fever comes closest to pneumonia. Sporadic cases of both occur during epidemic periods, although more commonly so in pneumonia, while both are most frequent in barracks, gaols, and asylums. Even when not epidemic there may be remarkable house outbreaks of cerebro-spinal fever. The seasonal relations are the same in both, and the two diseases may prevail together. Other points of resemblance are found in the abrupt onset, the herpes, the almost identical character of the fibrino-purulent exudate, as pointed out by Netter, and the frequent complication of pneumonia by meningitis, and of the latter by pneumonia. The degree of contagion is about the same in both diseases, and it has been claimed that the organism described in cerebro-spinal fever is only a degenerate variety of the pneumococcus.

On the other hand, Leichtensten urges against the view that pneumococcus is the cause of epidemic cerebro-spinal meningitis the facts that pneumonia is of universal distribution, whereas the other condition is very rare, and in some countries still unknown. Croupous pneumonia

attacks every age, and somewhat more so with increasing age, while epidemic meningitis chiefly affects children and young persons. Pneumonia has a typical course and crisis: epidemic meningitis has no crisis. The complications also differ.

THE BACTERIOLOGY OF CEREBRO-SPINAL FEVER.—More than twelve years ago Weichelsbaum described a diplococcus with special cultural peculiarities, which he claimed to be the specific organism of the disease. In 1895 his observation was confirmed by Jaeger. No mention, however, was made of the fact in Allbut's System, published in 1806, or in Lowne's and Thompson's System in 1897. Weichelsbaum has been confirmed by Heubner, Councilman, Mallory and Wright, and the organism, known as the meningo-coccus, or the diplococcus intracellularis meningites, is now regarded as the specific cause of the malady. The subject is fully discused by Netter in Vol. XVI of the "Twentieth Century Practice." My own cases have been carefully investi ated by my colleagues, Drs. Gwyn, Harris, and Welch. The meningococcus in coverslips from the exudate is usually a diplococcus lying within the polynuclear leucocytes; hence the term intracellularis. It may also occur free. It is stained with the ordinary reagents, and is discoloured by Gram's method. It grows best on Loeffler's blood serum, on which it forms round, whitish, shining, viscid-looking colonies, with smooth, sharply defined outlines, which contain a diameter of 1 to 1½ millimetres in twenty-four hours. It is found in the cerebro-spinal exudates, and has has been rarely isolated from the blood, pus from joints, pneumonia areas in the lungs, and nasal mucus.

Our clinical and pathological experience with the organism is as follows:—In twenty-one cases which I have seen lumbar puncture was made in sixteen. In three cases seen in consultation the diagnosis was so clear that puncture was not made. In Cases 1 and 2, both mild, the puncture was made, one on the sixth and the other on the seventh day, but no organisms were found. In Cases 3 and 4, admitted late in the disease, it was not thought necessary to perform it. Of the remaining fourteen cases, in thirteen the diplococcus intracellularis was present on coverslips and in cultures. In the fourteenth case its presence was doubtful on the coverslips, but the staphylococcus was found in culture. Of the five autopsies the diplococcus intracellularis was present, and in two had been found during life. In one the streptococcus and in another the staphylococcus was isolated.

MICROBIC ASSOCIATION IN CEREBRO-SPINAL FEVER.—It is interesting to note that the diplococcus intracellularis is often found to be not in pure culture. In the Boston epidemic other organisms were often found, particularly in lumbar punctures taken in the course of the disease. In a large number of Netter's cases the pneumococcus was present. In our own series it was found only once in the fluid obtained by lumbar puncture. Another point in diagnosis is that after five or six weeks or longer the diplococcus intracellularis often disappears. The chief organisms found in association are the pyogenic organisms, the pneumococcus, and rarely, the tubercle bacillus.

On the whole, then, our observations support those of Weichelsbaum Jaeger, Councilman, and others, that in epidemic cerebro-spinal fever there is an organism with special cultured peculiarities which may reasonably be regarded as the exciting cause of the disease. Among recent observers, Netter alone appears to doubt this, and says that he found the diplococcus intracellularis in 16 only out of 39 cases, and in ten of these the pneumococcus was present at the same time.

Netter's position is illogical and confusing. In his article in the "Twentieth Century Practice" he assumes that cerebro-spinal fever may be caused by either the pneumococcus or the diplococcus intracellularis. That a cerebro-spinal meningitis may be due to the pneumococcus is everywhere acknowledged; but it is unlikely that so specific an affection as cerebro-spinal fever should be caused by two different organisms. Towards the close of the article the inconsistency of this view seems to impress him, for he says, "certain peculiarities prevent us from concluding that the two diseases are absolutely identical."

THE DIAGNOSIS.—In cerebro-spinal fever the disclosures of the post-mortem room are just as mortifying as in pericarditis. Who has not in enteric fever or pneumonia made an absolute diagnosis of meningitis, only to illustrate the dictum of Stokes that there is no single nerve symptom which does not and may not occur independently of any lesion of brain, nerve, or spinal cord? It it is very doubtful if either tuberculous or pyogenic organisms cause an acute primary cerebro-spinal lepto-meningitis.

The onset of the disease is peculiar. As a rule it is more abrupt than that of any other known disease, with the possible exception of pneumonia. The patient may be seized when at work or during sleep, he has rigors or chill. This onset is very different from that of the tuberculous form. In sporadic cases of cerebro spinal attacks there may be no fever at first. (Various charts illustrating the peculiarites of temperature were here shown on a lantern screen.) In two cases there was no elevation of temperature for three or four days, then the curve ran up suddenly to 104 degs. or 105 degr. Another chart showed extreme fluctuations from about normal to 106 degs. and 108 degs. (the latter preceding death). In another less common type the fever was continuous, resembling the third week or recovery stage of enteric fever. In one case regarded as typhoid the diagnosis of cerebro-spinal fever was established by lumbar puncture. One protracted case showed extreme irregularity, and at one time an inverse type of temperature—that is to say, a morning record higher than that of the evening. In some the fever is of a remarkably intermittent nature. It differs, however, from the paroxysms of intermittent fever in extending over twenty-four hours, whereas the intermittent periodicity occurs every twelve hours.

KERNIG'S SIGN.—This interesting sign, first described by a Russian physician, has been present in all our cases in which it has been looked for. It is an old observation that in protracted meningitis the patients lie with the thighs flexed upon the abdomen and the legs partly flexed on the thighs. To test for Kernig's sign the patient should be propped up

in bed in the sitting position, then, on attempting to extend the leg on the thigh there is contraction of the flexors which prevents the full straightening of the leg. On the other hand, in the recumbent posture the leg can be fully extended. Many patients with meningitis cannot sit up, but the test can be equally well applied by flexing the thigh on the abdomen, when, on attempting to extend the leg if meningities be present, the limb cannot be fully extended. Frics found the sign in fifty-three out of sixty cases, and Netter in forty-five out of fifty. Its presence is no indication of the intensity of the spinal involvement. Netter's explanation of the phenomenon is as follows: In consequence of the inflammation of the meninges the roots of the nerves become irritable, and the flexion of the thighs upon the pelvis when the patient is in the sitting posture elongates, and consequently stretches the lumbar and sacral roots, and thus increases their irritability. The attempt to extend the knee is insufficient to provoke a reflex contraction of the flexors while the patient lies on his back with the thighs extended upon the pelvis, but it does so when he assumes a sitting posture.

LUMBAR PUNCTURE.—By means of Quincke's lumbar puncture we can now say when a meningitis exists and are further able to determine the form of the disease. The technique of the operation is fully described in the text-books. It is a simple, harmless procedure, and in most cases can be undertaken without general anæsthesia, or with the aid of a local freezing mixture. The puncture is usually made between the second and third lumbar vertebræ, and is done with an ordinary aspirating needle. Often a few drops of blood flow first, then a clear or turbid fluid. A dry tap is unusual in cerebro-spinal fever. The needle may be plugged, or may be in contact with a nerve. In rare cases clear fluid may be obtained when meningitis exists, and in a protracted case the fluid may be turbid at one puncture and clear at the next. A clear fluid may be obtained from a puncture in the second lumber interspace, while lower down a turbid fluid may be withdrawn. In a recent *post-mortem* the fluid in the dorsal and upper lumbar regions was clear, while that in the lower lumbar and the sacral canal was turbid and flocculent. The amount of fluid varies from a few drops to a large amount—*e.g.*, 126 c.c. Cover glass preparations can be made at once, and cultures prepared by running a few cubic centimetres of the fluid on to a shunt tube of Leoffler's blood serum.

Has the lumbar puncture any therapeutic value? Williams, of Boston, thought it had, but Wentworth takes a contrary view. Netter reports some good results. We have given this point careful attention. In one chronic case the patient lingered three months. Seventeen punctures were made in all between the twenty-ninth and the seventy-fifth days of the disease, and of these fourteen were positive. A turbid, pale yellow fluid was removed at each effective tapping. On five occasions 100 cc. or more were obtained, once 125 cc., and once 126 cc. After the first two effective tappings the patient seemed better, the ten punctures dropped and he seemed much brighter, but he soon became worse and the fever rose. Following the sixth, seventh, eighth and eleventh punctures the

temperature fell 4.5 degs., 3.8. degs., 4 2 degs., and 5.8 degs. The drop in the fever followed so directly that it seemed only natural to attribute it to the lumbar puncture. The thirteenth puncture, however, was negative, yet the temperature fell 5.1 degs., and after the fourteenth tapping the temperature rose 2.6 degs. Evidently not the withdrawal of the fluid, but the peculiar character of the disease was responsible for the remission. The diplococcus intracellularis was found twice.

SPORADIC CEREBRO-SPINAL FEVER.—To what extent do isolated cases of cerebro-spinal fever occur between the epidemics? What is the nature of the primrry supperative meningitis which is met with from time to time in all communities?

Neither hospital statistics nor the ordinary death returns give any trustworthy information as to these questions.

From the Fifty-ninth Annual Report of the Registrar-General, 1896, I gather that the deaths from cerebro spinal fever in England from 1877 to 1896 inclusive, have only once exceeded 50 per annum. There has been a great reduction in the return since 1887, 233 cases for the ten years ending 1896, against 406 for the previous decade. In Scotland there were only six deaths from cerebro-spinal fever in 1895, and five in 1896. In Ireland there were 76 deaths from this cause in 1896, and the same number in 1897.

In the United States and Canada the occurrence of sporadic cases in the intervals between the epidemics has long been recognized. In Philadelphia, from 1863 up to the present date, a record has been made by Stillé Pepper, and Abbott. They show a gradual decline from 1884, when there were 124 deaths, to 1891, with 23 deaths. From 1892 to 1897, the deaths were 22, 35, 18, 17, 7, 10; 1898, 24 cases; while in the first four months of the present year there were no less than 89 deaths.

At the Johns Hopkins Hospital in the Spring of 1898 there were four cases of sporadic cerebro-spinal fever; the first of the epidemic cases.

One family presented the following history:—(1) a son, a young man, æt. 20, returned home with a terrible pain in the head. He had fever and vomiting and his head and neck were arched. He was delirious and died in five days; (2) a sister who nursed her brother, died in four days; (3) a second sister taken ill and recovered; (4) the mother, worn out with nursing her children, attacked and died in two days. These were five cases of the sporadic form in one family. The disease was not epidemic in the city.

BACTERIOLOGY OF SPORADIC CEREBRO-SPINAL FEVER.

In a number of sporadic cases the organism of Weichelsbaum has been found. The most important contribution of late years has been made by Dr. Hill, of the Great Ormond Street Hospital for Children. In a study of the simple posterior basic meningitis of infants he isolated from seven or eight cases a diplococcus conforming in every respect with the diplococcus intracellularis. In ten years there were forty-nine fatal cases of the kind at the hospital mentioned. Clinically

the disease differs from the ordinary type, as it attacks young children and is very protracted. Skin rashes are not frequent. Still was able to isolate the diplococcus from the periarthritic exudates.

By the kindness of Professor Welch the results of the twenty-five cases in our own city in which bacteriological examination has been made may be here given. There were six of cerebro-spinal fever, eight of pneumococcic meningitis, seven of pyogenic meningitis (in which streptococci and staphylococci were found together and separately), and four showing unidentified bacilli.

The pyogenic forms of meningitis do not concern us here; no case of primary streptococcus or staphylococcus came to autopsy. I have already referred to the chronic from of cerebro-spinal fever in which the pyogenic cocci may alone be present at the time of death.

PNEUMOCOCCIC MENINGITIS.

The pneumococcus has long been recognized as the most important organism in the production of meningitis, and the first question is how far sporadic cases of cerebro-spinal meningitis are due to it. Of twenty-five cases in the Johns Hopkins Hospital it was isolated in eight. Of twenty cases examined by Councilman, Mallory, and Wright, it was primary in two and secondary in eight. Netter examined sixty-one cases of meningitis bacteriologically, and found the pneumococcus thirty-five times, the same with streptococcus once, and once with staphylococcus, the streptococcus alone thirteen times, the diplococcus intracellularis three times. We may consider three groups of pneumococcic meningitis.

1. The meningitis as a complication of lobar pneumonia. In Montreal my attention was called to the frequency of this complication in eight of one hundred consecutive autopsies. The other groups are pneumococcic meningitis.

The clinical features of pneumococcic meningitis present many points of interest. Is the case one of cerebro-spinal fever with pneumonia, or of inflammation of the lungs, with an added meningitis? This question does not often arise at the bedside, as it is most exceptional for the meningitis of pneumonia to present the symptoms of cerebro-spinal fever, and in doubtful cases the lumbar puncture will settle the matter. The age of the patient is important. In meningitis complicating pneumonia all the cases were above the twentieth year, a striking contrast to cerebro-spinal fever, in which a large proportion are under twenty. A second point is the latency of pneumonia, which is much more often recognised in the deadhouse than in the wards. Netter states that fully one-half of the cases are latent. Headache and early delirium are present in all cases, owing to involvement or cortex. On the other hand, the mind may remain clear throughout cerebro-spinal fever. Spinal symptoms are rare in the meningitis of pneumonia. The importance of lumbar puncture cannot be too strongly emphasised. In a case of pneumonia in the wards of cerebral symptoms, the puncture showed the pneumococcus in the exudate. Lastly, an important point is that meningitis complicating pneumonia is almost always fatal. Personally I have never seen recovery under these conditions.

Secondary meningitis from local infection from nose, ear, &c., is often of pneumococcic origin.

Primary pneumococcic meningitis exists, and is abrupt in onset. The most important point to be determined is the exact proportion of primary cerebro-spinal meningitis due to pneumococcus and to diplococcus intracellularis.

Treatment.

In our cases no special drugs were used. Morphia was given to check pain, and sponging practiced to reduced temperature. Our mortality has not been very great when we consider the severity of the cases, thus eight cases died out of eighteen in hospital, and nine among the twenty-one I have seen. A distinguishing feature is the relief of pressure by withdrawal of cerebro-spinal fluid.

In two of our cases the spinal canal has been opened, drained, and irrigated. So far as I know, an extensive laminectomy had not been done for acute spinal meningitis until our first case on November 6th, 1898, was operated upon by Dr. Cushing. The spinal canal was thoroughly rrigated with salt solution and a quantity of purulent exudate washed out. No change followed in the existing paraplegia. The bladder and kidneys became infected, and the patient died two months after the operation. At the autopsy spinal meninges were smooth and looked normal. It was impossible to say where the dura mater had been incised, and there were neither adhesions nor thickening of the pia-arachnoid

In another case laminectomy was performed on the fourth day by Dr. Cushing. A catheter was passed beneath the dura mater, and the membranes drained and irrigated. For several days the patient seemed better, but he developed a hæmorrhagic cystitis, and died on the sixth day after operation.

Dr. Musser, of Philadelphia, has also had an unsuccessful case. In England Dr. Rodleston, and Mr. Herbert Allingham have reported a case of sporadic cerebro-spinal meningitis, in which the patient recovered after laminectomy and drainage. The operation which has been adversely criticised in some quarters, seems to be justifiable in severe cases, where the spinal symptoms are very marked, on the principle of a desperate remedy for a desperate disease.

THE PHYSIOLOGICAL EFFECTS OF CASTRATION IN THE MALE AND FEMALE.

A great deal of speculation has found expression in contributions to the study of the physiological effects of castration in the male and female, but, in truth, it is fundamentally erroneous to treat the two operations as if they had anything in common. The ovary is not a gland like the testis, and it is hardly likely therefore that the former possesses any internal secretion akin to that which is held to be furnished by the testis. The loss of this internal secretion in the male is credited with the production of more or less marked depression, which not unfrequently culminates in melancholia. In the female, on the other hand, the functions of the ovaries which call for removal have generally long since fallen into abeyance so that the ablation of functionally inactive organs is not likely to entail any corresponding constitutional disturbance. With regard to the sexual appetite, its preservation or otherwise must greatly depend upon circumstances. The loss of the ovaries in an unmarried female usually leaves the sexual appetite undeveloped, whereas in a married women the nervous system has received previous impressions which may keep awake and prolong the period of sexual activity. The same thing holds good in males. If the testicles are removed before puberty no sexual appetite is developed, but if what we may call the sexual habit has been formed the nervous system reacts to certain stimuli as a matter of routine even though the original essential stimulus is wanting. After all these are details of no practical importance, because the conditions which call for castration on the one hand and removal of the ovaries on the other are always such as to render the question of sexual appetite a point of more than secondary importance.

TRIGGER-FINGER (DIGITUS RECELLENS).

Dr. David Reisman in the *Philadelphia Polyclinic* (Vol. VII, No. 13) reports a case of digitus recellens and gives a careful resume of the literature of the subject.

Trigger-finger is a rare and annoying affection, characterized by a sudden locking of the finger when it is flexed or extended to a certain point. The finger thus locked cannot be further flexed or extended without a powerful voluntary effort, and frequently not without the aid of the other hand. The forcible overcoming of the resistance is usually attended by a distinct, audible snap.

Trigger-finger is considerably more frequent in the female than in the male sex, and usually involves but one finger, the middle finger being the seat in over one-third of all cases.

Schmit pointed out the interesting fact that the disease was common in seamstresses, embroiderers, knitters, and mattress-makers, and he attributed it to functional overuse of the fingers.

Dr. Riesman's case was probably of nervous origin, the part affected being the little finger. The present case presents nothing of peculiar interest except possibly the pronounced acroparesthesia, accompanying the condition.

The prognosis of trigger-finger is on the whole good, and a considerable number of recoveries is on record. The treatment generally advised is the application of iodin, electricity, massage, passive motion, and fixation of the finger by means of a splint. Inveterate cases have been treated by operation, which usually consist in removing whatever obstacle to free movement exists. If any underlying cause, like rheumatism or gout, is ascertainable, proper general treatment is of course to be instituted. In cases accompanied by pronounced paresthesia phenomena, the use of ergot may be tried.

ECZEMA IN INFANTS.

It is almost the universal belief of pediatric authorities that eczema in infants and young children is largely of intestinal origin. It seems certain that diet frequently plays an important role in its causation. By this is not meant that any particular article of food causes eczema, but rather that faulty nutrition of the tissues, due to dietary errors, plays a considerable part in the production of the disease. The intestinal indigestion which results from over-feeding is one of the most common caus s. The early and excessive use of farinaceous foods or milk containing a high percentage of fat are also undoubted factors in its production. Although the child may be well nourished, careful observation will usually reveal some form of indigestion or dietetic error.

In young children delicacy of the skin is undoubtedly a factor of importance in the production of eczema. Causes which would produce but little irritation in the adult frequently cause serious inflammation in the sensitive skin of the child.

The diathetic nature of eczema has been discussed with considerable warmth. While it is doubtful whether the disease can strictly be called a diathetic one, it is certain that it is more common in the children of rheumatic and gouty parents.

In an article appearing not long since in this journal, Dr. Bulkley classifies the internal causes of eczema as (1) dietetic; (2) assimilative; (3) neurotic; and the external as (1) climatic; (2) hygienic. The parasitic theory is strongly urged by some, but it is not yet proved that microorganisms are the exciting cause of most cases, though they undoubtedly are such in many instances.

Whatever the exciting cause may be, it is certain that the condition somewhat vaguely expressed by the term predisposition is of great importance. The skin of some children becomes eczematous upon the slightest irritation or exposure; in other children the disease can hardly be produced; irritation may result in dermatitis or local inflammation, but not in eczema. Predisposition is an element which must be considered in every case.

In infants, eczema shows but slight tendency to spontaneous cure. It is prone to relapse, and, as a rule, is a prolonged and discouraging disease. When occurring in children suffering from chronic indigestion, it is especially rebellious to treatment, and assurances of speedy cure should be made with great caution.

PHYSIOLOGICAL EFFECTS OF EXERCISE.

The recent observations of Dr. William regarding the effects of muscular exercise upon the heart and other organs is quite in accordance with the data furnished by previous investigators. The facts in question were obtained from an examination of the participants in a long distance running race held last month in Massachusetts. The results as recorded in the lay press are as follows:

The men who entered the race were vigorous, healthy, normal young men; average age 22 years; at the finish all were in a more or less exhausted condition; there was a loss of weight varying in individuals from 6⅛ pounds (maximum) to 1¼ pounds (minimum); there was a loss of temperature varying from 5.4° F. (maximum), to 0.5° F. (minimum).

By far the most interesting result of these studies was the demonstration that every form of exercise and every individual participating should receive separate consideration as to the effect of this violent and prolonged muscular exercise upon the heart. These latter studies justified the following conclusions: That before the race the hearts of all the men who finished were in a condition of relative healthy enlargement (physiological hypertrophy); that the only heart examined beforehand which was of reduced or normal size was that of a man who dropped out on the way; that the effect produced upon the hearts of those who finished was simply a participation of its muscular structure in the general muscular exhaustion which resulted from the effort. The chief signs of this muscular exhaustion of the heart subsi d before the men left the examining room.

The conclusions to be drawn from this report are, that while the injurious effects of such exercise in the case of picked and healthy men may not be apparent, there is at least a temporary cardiac hypertrophy as well as a considerable strain on the blood vessels and excretory organs. Even admitting that all this is strictly physiological, it is not the less true that frequent exercise of this kind will produce a condition of muscular hypertrophy, which, as in other conditions, is prone to result in secondary degeneration. We believe that habitual muscular exercise of a violent character is decidedly inimical to health, and that any form of muscular development which greatly exceeds the demands of daily life is an element of danger to the individual. Health and longevity are not promoted by this condition, but rather by a proper activity and due equilibrium of the various organs and tissues of the body. Bodily endurance rather than phenomenal strength is the object to be attained.

A Method of Removing Foreign Bodies from Beneath the Nails.—*Nouveaux Remèdes* for August 24 calls attention to this procedure:—Soften the nail by applying to it a 10 per cent solution of caustic potash, scrape away the softened portion with a piece of glass, repeat the potash application and the scraping, and the foreign body is exposed and can easily be removed.—*New York Med. Jour.*

BOOK REVIEW.

SAUNDER'S MEDICAL HAND ATLAS.

Atlas of Diseases of the Skin, including an epitome of pathology and treatment by Prof. Dr. Franz Uracek of Vienna. Edited by Henry W. Stelevagon, Jefferson Medical College. Philadelphia: W. B. Saunders; Toronto: W. Carveth & Co. 1899. $3.50.

This is the latest of the series of atlases which are being placed before the profession by W. B. Saunders of Philadelphia. This series has been remarkably successful. It filled a long unsupplied want: and filled it well.

Those of the series which we have had were, we think, quite as good as could be placed on the market for the general practitioner.

The present volume seems to be arranged so as to be of great service. There are chapters on general therapeutics and treatment of individual skin diseases which are extremely helpful to everyone who has to do with skin diseases,—and who in the profession has not? The editor, Dr. Stelevagon, the well known Clinician of Jefferson, has done his work well.

While we know it is extremely difficult to study skin diseases from books, we must say that the 63 beautifully executed plates and 39 half-tone illustrations will greatly aid those in need of aid.

We commend the book as a useful and practical addition to the study of skin diseases.

Annual Analytical Cyclopædia of Practical Medicine, by Charles E. de Sajous, M.D., and one hundred associate editors. Volume III. Philadelphia: The F. A. Davis Co.; Toronto: Carveth & Co. 1899.

This third volume of Sajous' monumental work will be welcomed by everyone who has the good fortune to know the value of its predecessors.

In reviewing volume I., we took occasion to note the general plan of the work, and to give it a hearty endorsation. To those of the profession, who have read, or used, the first two volumes, no message is necessary. But to those who have not, we would say to the general practitioner of medicine who is anxious to know the latest in his science and art, the whole work is invaluable.

This volume contains among many other subjects of interest, articles on criticism by Osler and Norton; and ophthalmic goitre by Putnam of Boston; goitre by our own Adami of Montreal.

Byford, Stinson, Keyes, Sayre and Stelevagon are other contributors to this volume, which perhaps exceeds in interest either of the other two.

The letter press, illustrations, maps and chromo-lithographs are up to the highest standard of the American printer's art, than which no higher praise can be given.

We appreciate the volume as a distinct and valuable addition to our own library, and feel sure that any of our readers who have not secured the work, cannot spend money on books to better advantage than by purchasing this work.

A Manual of Surgical Treatment. By W. Watson Cheyne, M.B.,F.R.C.S., F.R.S., Professor of Surgery in King's College, London, Surgeon to King's College Hospital, etc., and F. F. Burghard, M. D. and M. S. (Lond), F.R.C.S., Teacher of Practical Surgery in King's College, London, Surgeon to King's College Hospital, etc. In six imperial octavo volumes, with illustrations. Volume I, 285 pages, with 66 illustrations. Cloth, $3.00, net. Lea Brothers & Co., Philadelphia and New York. 1899.

Who has not experienced the want of detailed information, especially as regards the after treatment of our cases, and have had to learn the best methods of procedure from experience? Nothing can replace experience; but it is often of the greatest advantage to have a detailed record of that of others upon which to base our work. It is this want the authors intend to supply, the details as to treatment from the commencement to the termination of the illness. They have omitted diagnostic symptoms largely, and confine themselves to pathology and symptom so far as it is necessary to render intelligible the principles on which treatment is based, and do not discuss the various treatments proposed by others, but plainly state what the authors by experience have decided as the best line of action in all cases. The work is well worthy the perusal of those interested in surgical treatment.

THE TEXT OF ANATOMY BY AMERICAN AUTHORS.

This work surpasses anything of the kind that has ever been produced, the authors have endeavoured as far as it is possible to make a text-book which shall stand as a living teacher to the student. The various topics have been arranged on familiar lines, and each author has set forth his subject in the method which his experience has shown him to be the most useful to the student. The pictorial and diagramatic illustrations are abundant and of striking artistic excellence. In fact it is a perfect anatomical atlas, and to the general practitioner who wants to refresh his memory on muscular attachments and relations, as well as arteries, veins, nerves, etc., the work gives a most vivid likeness of all parts. The authors may well feel proud of their production.

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SOME OF OUR RESOURCES IN THE DIAGNOSIS, CLASSIFICATION AND TREATMENT OF CYSTITIS.*

BY E. C. DUDLEY, A. M., M. D.,
Professor of Gynecology, Northwestern University Medical School, Chicago.

When the diagnosis of cystitis was based upon the presence of pus in the urine and painful and frequent urination, its treatment gave less satisfaction to the physician and less relief to the patient than that of almost any other inflammatory disorder. Now these symptoms, pyouria and painful and frequent urination are recognized as results not only of inflammation of the bladder but as well of a variety of other lesions, especially lesions of the ureter, kidney and urethra. Moreover the cystitis itself which is often thought of as a distinct disease is now almost relegated to the rank of a symptom and is properly considered solely in its relations to certain deeper lesions which individually or collectively may underlie and perpetuate it or may result from it. Within a single decade the management of this symptom has risen from the plane of empiricism and has taken its place upon the scientific basis of pathology. This change has come about chiefly as the result of two causes:

1. Etiological investigations especially including bacteria.
2. Improved instrumentation in diagnosis and treatment.

ETIOLOGY.†

It is most important to distinguish clearly the predisposing from the exciting causes. Among the predisposing causes are:

1. Pathological urine.
2. Retention of urine.
3. Tumors.
4. Foreign bodies, especially stone.
5. Trauma.
6. Any local of systemic cause of congestion or blood stasis.

These were formerly considered the essential causes of cystitis.

Vastly preponderating at least among the exciting causes are the pathological bacteria and their products. The bacteria most frequently found are:

1. Bacillus coli communis.
2. Gonococcus.
3 Bacillus tuberculosis.

*Read before Trinity Alumni Association at the Annual Meeting in May, 1899.

†Senn, Trans. Am. Surg. Assn., 1898. Consulted.

The bacteria less frequently found are:

1. Proteus vulgaris Hauseri.
1. Staphylococcus pyogenes.
3. Streptococci pyogenes.
4. Dipplococcus pyogenes.

It is generally agreed that the gonococcus and bacillus tuberculosis are prone to attack the healthy bladder and that they require little if any predisposing causes. On the other hand a normal bladder is said to offer much resistence to the other bacteria, that is, they do not become active except in conjunction with definite predisposing causes.

The following history from Reymond* supports the fact that predisposing causes are necessary to the action of certain bacteria. A boy sixteen years old after great bodily exertion was seized with severe abdominal pain followed soon by fever. Below the umbillicus a painful mass was found which by recto-abdominal examination proved to be a collection of fluid between the bladder and rectum. A large abscess was evacuated by coeliotomy. Although from mechanical causes the urine at the height of the trouble could not be completely evacuated, nevertheless no cystitis or other bladder symptoms appeared. There was no history of gonorrhoea or of any other genito-urinary disorder, and the patient had never been catheterized. Twice before and once after the operation urine, aseptically collected, gave a pure culture of Bacteria Coli Communis only; ten days later the urine was again sterile. In the evacuated pus bacteria coli communis, staphylococcus albus, streptococcus and other bacteria were found.

This leads to three deductions:

1. Bacteria traversed the bladder wall from the outside to the inside.

2. Of the different forms present in the abscess only the Bacteria Coli passed through the bladder wall.

3. The Bacteria Coli Communis caused no inflammation by its presence. It was only a Bacteriuria.

The infective agent may reach the bladder in any of the following ways:

1. From the kidney or pelvis of the kidney.

2. From the ureter.

3. From intestine and other adjacent structures or organs, especially if they be adherent.

4. Through the blood.

5. Through the urine.

Ammoniacal urine is known to result from the decomposing action of certain bacteria, notably the proteus vulgaris, upon urea; moreover, the frequent association of alkaline ammoniacal urine with cystitis has given rise to the more or less common impression that the disease depends upon

* Bulletin de la Societe Anatomique de Paris, July 2, 1897, page 583.

the irritating action of urine which has undergone ammoniacal decomposition and that such decomposition is necessarily associated with cystitis. Johannes Miller* of Wurtzburg was the first to upset this idea. He showed that in seventy-three per cent. the cases cystitis urine was acid. Soon after these observations of Miller, Melchoir† reported the results of sixty-two very accurate observations. He found that ammoniacal decomposition was only a minor phenomenon and that in many of the severest forms of cystitis acid urine was present even up to the time of death. Almost all researchers now reach the uniform result that the bacillus coli communia, or a very closely related microbe, is the one most frequently found in cystitis. In one hundred and twenty cases collected by Rostoski‡ this germ was found in eighty cases.

Whenever the bacterium coli communis was found alone the urine was acid; whenever proteus vulgaris, it was alkaline. Alkalinity with bacteria coli communis is said to be always due to the association of other microbes. Some of the following conclusions of Melchoir are most significant:

1. "The bacillus coli communis is most frequently found not only in cystitis but also in pyelitis and suppurative pyelonephritis.

2 "The bacillus coli communis may be destroyed and crowded out by those microbes which decompose urea, and produce alkaline urine.

3. "The bacillus coli communis often appears to cause hemotogenous infection from the intestines.

4. "Pyelonephritis, especially that caused by the bacillus coli communis, is often the source of a secondary cystitis.

5. "Even the microbes which decompose urea may cause pyelonephritis with acid urine and without the presence of complicating cystitis."

Instrumentation and Diagnosis.

Within a few years the cystoscope has revolutionized our knowledge of the pathology, diagnosis and treatment not only of cystitis but of many other hitherto more obscure urinary disorders.

In former times when the principal factors in etiology were stricture of the urethra, foreign bodies in the bladder, and enlargement of the prostate, and when there was no means of viewing the bladder mucoss, the finger through the dilated urethra and the sound were the only and rather dubious means of exploring the bladder. Digital exploration with its attendant dangers was then common practice. As late as 1883 Sir Henry Thompson§ in his work on Digital Exploration reported as the result of two years' observation by that method a series of over thirty cases of tumors in the bladder upon which he had operated. Most significant in contrast is the report of Alexander Stein two years

* Rostoki. Deutche Medicinischi Wochenscrift, 1898, s. 235.

† Monatsbericht uber den Gesamtleistung, Heft 10.

‡ Deutche Medicinische Wochenscrift, 1898.

§ Belfield, Am. Gyn. & Obstet. Jour., Jan., 1899.

earlier in which he was able to collect from all the literature, including the post mortem observations, only about twenty cases.* It now remained for the cystoscope to define cystitis and to differentiate it from other intra vesical disorders.

THE CYLINDRICAL CYSTOSCOPE.†—One of the first, if not the first, to employ cystoscopy was Gustav Simon. He used the familiar cylindrical cystoscope with an obdurator through which light is reflected to the bladder by a head mirror. Later, Pawlick in Europe and Kelly in America perfected the instrument and added to its value by placing the patient in the elevated pelvic position. Finally Kelly still further contributed to the usefulness of the instrument by the adoption of the knee breast position.

THE ELECTRICAL CYSTOSCOPE.—The next practical development was the panelectroscope of Leiter in Vienna and later the similar instrument of Casper. Both of these cystoscope carried the electric light ray into the bladder by means of refracting prisms at the external end of the tube. The final development of this instrument began with Nitze in 1876. He placed the electric vocuum light at the inner extremity of the tube in such a manner as to give direct illumination and to transmit to the eye through a series of lenses an exact picture of the bladder mucosa magnified. The electric current was furnished by a battery from which insulated conductors passed through the tube to and from the lamp.

Cystoscopy and urethral exploration in the female owing to the shortness and dilatability of the urethra may be satisfactorily accomplished by means of the simple tubular cystoscope of Pawlick and Kelly. The greater length of the male urethra and consequent greater distance of the field for inspection from the eye and its magnifying power render the prismatic electroscope indispensable. The electrical cystoscope, even in the female, is preferable.

By means of the Cystoscope the entire interior of the bladder may be brought into view; foreign bodies, tumors and other pathological changes may be recognized and the ureters and the pelvis of the kidney may be explored. The instrument has often revealed the presence of stones, tumors and ulcers which had entirely escaped detection by the sound. Numerons cases in which cystitis is of only secondary importance to other associated lesions, such for example as tumors, tuberculosis, piles or hemorrhoides of the bladder are now frequently observed by the cystoscope.

Cystoscopy is of great value in preventing blind and meddlesome treatment for a class of cases which present the subjective symptoms of cystitis but in which inspection fails to show any lesion whatever of the bladder mucosa.

The value of the instrument is also incalculable when only limited areas are diseased, for example, in the mild inflammations of the trigone and in fissure at the neck of the bladder. Under such conditions the

* Belfield, Am. Gyn. & Obstet. Journal, Jan., 1899.

† Viertel, Veits Handbuch der Gynakologie.

operator instead of treating the entire vesical mucosa by means of injections more or less strong may direct any appropriate application to the diseased part only.

THE SEGREGATOR.—Another instrument of great importance is the urine segregator of Harris;* This instrument collects the urine directly and separately as it passes from each ureter into the bladder. To a great extent it supercedes ureteral catheterization. By its use certain dangers of infection of the kidneys by ureteral catheterization may be avoided. The value of this instrument depends not only upon the fact that without ureteral catheterization we are enabled by its use to separate the urine from one kidney from that of the other, but also upon the fact that we temporarily, as it were, eliminate the bladder from the urinary tract. There may be present the subjective symptoms of cystitis, that is, pyouria, painful and frequent urination, and ammoniacal urine, and yet the bladder may be free from disease. It is absolutely necessary to a correct diagnosis of cystitis that we know what abnormal constituents of the urine have their origin within the bladder itself. Normal urine suffers no change in a normal bladder free from microbes, hence a comparison of analyses of urine, taken from the bladder, with urine taken directly from the kidneys may at once indicate the direct location of the disease.

The points to be observed in urine thus obtained are:

1. The reaction.

2. The presence or absence of pathological products, namely, pus, blood, epithelial cells, bacteria, crystals, etc.

The reaction of the urine should be taken at once, as secondary changes occur sometimes quite rapidly. If urine taken directly from the kidneys possess a normal degree of acidity while that from the bladder be alkaline, it is very evident that the pathological process producing the alkalinity must reside within the bladder. If urine from the kidneys be free from pathological products while that from the bladder contain pus, epithelium or bacteria, the involvement of the bladder is unquestioned.

The urine segregator possesses the following advantages:

CLASSIFICATION.

ANATOMICAL CLASSIFICATION.—In our present knowledge of the subject a perfect classification is impossible. Numerous classifications have been proposed.

ANATOMICAL CLASSIFICATION.—According to the special structures involved this comprises: pericystitis, paracystitis, interstitial cystitis and endocystitis. The difficulty, not to say frequent impossibility of separating these varieties one from the other and the fact that two or more usually coexist renders this classification, although diagrammatically attractive, clinically impossible. There are no sharp lines of demarkation between the so-called anatomical forms.

* Adaptations Transactions, Chicago, Gynecological Society, November, 1898.

THE PATHOLOGICAL CLASSIFICATION includes numerous varieties such as catarrhal, suppurative, ulcerative, hemorrhagic, exudative, exfoliative and fissure cystitis ' These however are rather phases and possible stages than distinct varieties of the inflammatory process.

BACTERIOLOGICAL CLASSIFICATION.—This would comprise as many forms as there are varieties of infective microbes of which the principal ones have already been mentioned. This classification although quite attractive in the laboratory is often impractical at the bedside. It is possible however that the more exact knowledge of the future may give to the bacteriological classification a practical value.

These various classifications, however, from the standpoint of nomenclature are most convenient. Such words for example as gonorrhoeal, acute, chronic, suppurative and interestitial are useful for purposes of description and to designate the various forms and phrases of the infective process. For example, we should use the word endocystitis to describe not a distinct lesion independent of the rest of the bladder and rather an essential part of and inflamed organ.

PATHOLOGY AND DIAGNOSIS.*

Cystitis in the first place must be differentiated from simple irritability of the bladder; this condition often occurs in neurasthenic subjects; it is often of neurotic origin. The diagnosis and treatment are clearly those of the underlying neurosis.

The attempt will not be made to differentiate all the phases and varieties of cystitis but rather to outline the more pronounced types.

In the beginning of cystitis the cystoscope shows the blood vessels to be less sharply defined. Soon the normal light pink, almost whitish, color of the mucosa assumes a deeper and deeper hue until the sharp demarkation between the vessels is lost and the whole surface is finally of a uniform deep red color. The epithelium may then be cast off in small particles from circumscribed, narrow or broad areas, and the surfaces thus exposed may take on a granular appearance. Finally in severe cases one may observe pus coagulation, excessive swelling and edema of the bladder wall. The urine now contains epithelial detritus and pus cells in large quantities.

The frequency of mixed infection and the presence of other practical difficulties may render it often impossible to distingush between all the different bacteriological varieties; it is however usually possible and is often desirable to differentiate the tuberculous from the other varieties, especially from the gonorrhoeal. The differentiation of tuberculous from gonorrhoeal cystitis is outlined as follows:

Tubercules Cystitis.	*Gonorrhoeal Cystitis.*
1. Located chiefly about the trigone.	1. Not at all so confined.
2. Absence of inflammatory reaction zone.	2. Clear inflammatory reaction zone latter changing to dull brown color.

*Kolisher Die Erkrsnkungen der Weiblichen Harnröhre und Blase consulted.

Tubercules Cystitis.	*Gonorrhoeal Cystitis.*
3. Local tubular cystitis not very common; general tubular cystitis very rare	3. Of common occurence both local and general.
4. Characterized by the presence of small tubercles situated about the trigone and ureteral orifices.	4. Characterized early by insular areas of inflammation with healthy or nearly healthy intermediate mucosa. Later insular areas becomes confluent and extend over the whole mucosa.
5. No projecting tufts of pus.	5. Projecting tufts of gonorrhoeal pus are apt to be present. In chronic stage regions of elevations may be excavated by ulceration.
6. No subperitoneal extravasation of blood.	6. In very acute stage there is subperitoneal extravasation of blood.
7. Bacillus Tuberculosis.	7. Gonococcus.

The picture here drawn of gonorrhoeal cystitis corresponds in some degree with that of other non-tubercular varieties.

Certain so-called clinical and pathological forms and phases of cystitis may be designated as follows and have great diagnostic significance:

1. Catarrhal cystitis.
2. Suppurative cystitis.
3. Ulcerative cystitis.
4. Exudative cystitis.
5. Exfoliative cystitis.
6. Fissure cystitis.
7. Foreign-body cystitis.
8. Leucoplakia cystits.

1. Catarrhal Cystitis.—A large proportion of the cases of chronic inflammation are of this variety. The term should be restricted to surface infection and to cases in which the product of inflammation comes from the superficial epithelial elements of the bladder mucosa. The disease is marked by moderate swelling, redness and exfoliation of epithelial cells and by profuse mucous discharge. In the chronic stage the muscular layer becomes infiltrated, thickened and hypertrophied. The urine contains epithelial cells, a moderate amount of pus, and is usually acid. Erosions, ulcerations and as a consequence more abundant supperation may follow. Great alkalinity of the urine indicates a rather advanced stage and then the cystoscope will reveal a deposit of grayish white color containing muco-pus, that is, the cystitis originally catarrhal may become distinctly suppurative.

2. SUPPURATIVE CYSTITIS.—In this form the inflammation may have been diffuse from the beginning and have involved both the superficial and deeper structures of the bladder wall. As well stated by Senn the microbic infection is of sufficient intensity to destroy the protoplasm of the pathological products of the inflammation and thus transform the the leucoytes and epithelial and connective tissue cells into pus corpuscles. The urine contains an abundance of epithelial cells and pus. The ulcerative process may involve the deeper structures and in exceptional cases may lead to perforation. The urine is acid, or if ammoniacal, may be so from decomposition due to the intercurrence of microbes other than those which produced the original infection. In the ammoniacal urine, will often be found the diplococcus pyogenes and the proteus vulgaris. Suppurative cystitis both in its acute and chronic stages is prone to invade the ureters and kidneys. In fact chronic uncomplicated cystitis is rare. The cystoscope reveals the local conditions as already described.

3. ULCERATIVE CYSTITIS.—The ulcerative phase of cystitis has already been mentioned as a later stage of the catarrhal and suppurative varieties. The term is here used however to designate that variety in which ulceration is the initial or at least a very early factor. The infection, as described by Senn, "appears to be of a peculiar kind, limited in extent, and the resulting inflammation leads quickly to a circumscribed necrosis. There is usually a single circumscribed ulcer, the so-called 'simple' ulcer of the bladder. This form of cystitis is quite rare and resembles in many respects gastric ulcer and the round duodenal ulcer."*

"Fenwick has seen a number of cases of simple, solitary ulcer of the bladder. The disease is usually met with in young men without a venereal history. The first symptom is increased desire to urinate, coming on suddenly; intermittent haematuria then appears. He describes three stages. In the first stage the urine is acid, the specific gravity high, and pus scanty. In the second stage the ulcer becomes incrusted with phosphates, and fragments of the deposits break off now and then and are passed with the painful paroxysms, or retained to serve as nuclei for calculus formation. During the third stage the bladder becomes contracted, the mucous membrane extensively ulcerated, and ureteral and renal lesions arise. The ulcerative form of cystitis is undoubtedly the result of an infection through the blood, the inflammation attacking the tissues around an infected embolic infarct, and reaching the surface of the bladder by a process of necrosis. Ulceratic cystitis, like gastric and duodenal ulcer, is found more frequently in young adults, and usually without any antecedent or attending predisposing local cause s." In the diagnosis the cystoscope is indispensable.

4. EXUDATIVE CYSTITIS.—This is characterized by the formation upon the bladder mucosa of a so-called membrane, hence, it is usually designated by the rather confusing descriptive terms: "membraneous," "diphtheritic," "croupous," or "fibrinous." The exudative membrane is the product of inflammation; it is, in fact, apt to be the product of extensive necrotic changes, and as such, indicates a grave lesion. There may be extensive

* British Medical Journal, May 9th, 1896.—From Senn.

destruction even in the musculature and especially in the deep blood vessels and lymphatics. The urine is usually alkaline. The disease has been chiefly observed during the child-bearing period, and then usually in puerperal women. The urine contains fibrinous shreds or cast-off patches of membrane. Cystoscopic examination reveals a yellowish white membraneous formation which may often be picked off by means of forceps passed through the cylindrical cystoscope.

5. EXFOLIATIVE CYSTITIS.—This variety is analogous to so-called dissecting metritis and dissecting vaginitis. The inflective process and inflammatory reaction is most virulent and intense. It results in the destruction and detachment of the mucosa and together with it sometimes of the muscular layer of the bladder; these may be expelled in fragments with the urine or may have to be removed from the bladder by a surgical procedure. It is the most grave and virulent form of cystitis and is apt to be fatal. The conditions are like those of exudative cystitis intensified. The diagnosis between the two forms depends upon the macroscopic and misroscopic character of the masses removed or thrown off from the bladder. The disease was early and fully described by Boldt.*

6. FISSURE CYSTITIS.—Fissure cystitis is caused by secondary infection of a traumatism at the neck of the bladder or in the trigone. As seen through the cystoscope the fissure is usually covered by a brownish or yellowish exudate surrounded by an œdematous area.

7. FOREIGN-BODY CYSTISTIS.—Cystitis caused by foreign bodies varies with the character of the body and the conditions of infection. A smooth body may be tolerated without subjective symptoms. A rough or angular substance may produce trauma and thus open the way to any form of infection.

8. LEUCOPLAKIA OF THE BLADDER.†—This is characterized by the appearance of grayish or whitish small circumscribed areas usually in the trigone. The epithelium has undergone changes which render it opague and which have been likened to the changes of keratitis. The cystoscope reveals a number of grayish white reflecting spots of a diameter approximating one-fourth inch. These spots while desquamating are below the level of the surrounding mucosa; after desquamation has ceased they become flush with the mucosa. The most pronounced subjective symptom is an intolerable and almost constant desire to urinate. Micturation may be attempted as often as once in fifteen minutes through the day and almost as frequently during the night. Leucoplakia results from long continued chronic areas of inflammation; it may be the starting point of general cystitis.

TREATMENT.

The treatment falls under four heads:

1. Prophylactic.
2. Medicinal.
3. Topical.
4. Surgical.

* American Journal of Obstetrics, June, 1889. † Kolisher.

1. Prophylaxis.*—Numerous autopsies upon subjects who have not suffered from cystitis have shown a hyperemic state of the bladder so marked that it must have been of long duration and yet had not gone to the extent of infection and inflammation. The explanation must be that the infective element had not been present or if present had not become active. On the other hand the question has been raised and usually answered in the negative whether the mere presence of infective microbes alone, tuberculosis and gonorrhœa excepted, can easily produce cystitis. It is commonly, therefore, agreed that infection must usually depend upon first, an abnormal condition of the soil which renders the soil susceptible; second, upon the presence of the bacterial exciting cause. A two-fold lesson is obvious: to keep the bladder in a state of resistance and to avoid the introduction of infective material.

Susceptibility to infection may result from either systemic or local states. The systemic conditions are often the result of faulty elimination and consequent defective circulation. Hepatic and cardiac disorders, kidney insufficiency and constipation at once suggest themselves. We must also have in mind such conditions as anemia, diabetes, rheumatism, gout, lithemia and cholemia. These disorders call for hygienic and medical treatment, for judicious elimination and nutrition. At the risk of seeming to advocate routine measures one may suggest the value of mercurials and salines. The writer has occasionally been gratified at the disappearance of irritation in the bladder from the administration three times a day for a number of weeks of calomel in doses from one-tenth to one-twentieth of a grain supplemented by the free use of natural or artificial mineral waters or of pure water. It is clearly unnecessary to do more than mention the words food, exercise and sleep.

The introduction of the catheter under the sheet, its passage without preparatory disinfection of the vulva, the use of the septic catheter and the slight traumatism which the use of the instrument may cause and the almost certain ingress of septic matter through such traumatism are well known to every intelligent physician. But unfortunately many intelligent physicians, although intellectually cognizant of the facts, are not practically alive to their importance.

The possible relations of parturition to cystitis are most significant; among them are those which arise from certain pelvic defects, such for example as contraction or excessive inclination of the pelvis which may retard or obstruct labor and thereby cause prolonged pressure of the child upon the bladder. Such pressure from any cause is full of danger.

Gestation with a retroflexed uterus finally enlarges the uterus until it becomes impacted under the sacral promonitory; then pressure of the cervix upon the neck of the bladder forces it against the pubes, prevents the complete evacuation of the bladder, and results in the retention of residual urine. This urine necessarily becomes decomposed and is then a most favorable culture ground for bacteria; the inevitable result is cystitis. It is true that the bladder may be displaced by tumors or by other

* Kletsch, Am. Gyn. & Obstet. Jour., Jan., 1899, Consulted.

causes and yet remain healthy even though the displacement produce much congestion, but given the combination of the three elements congestion, decomposed residual urine and bacteria, even though any one alone might be ineffective, the result is unavoidable. The necessity for prompt replacement of the displaced gravid uterus is therefore clear.

It is manifestly important; first, to avoid the introduction of a cause out of which infection may arise, and second, to relieve the patient of any cause which may be present without the introduction of another.*

MEDICAL TREATMENT. The medical treatment already discussed as a part of the prophylaxis has great value in connection with other forms of treatment. The principles are necessarily those of general internal medicine. The particular indications have reference to the use of such drugs as may change the quality or increase the quantity of the urine. If the urine is strongly acid for example it should be diluted by the free drinking of fluids or rendered less acid by the use of alkalies; if alkaline its reaction may be modified by the use of acids. For this purpose benzoic acid alone or combined with borax and dissolved in cinnamon water is a classical and useful remedy. The indication to relieve subjective symptoms is two-fold; first, to allay suffering and nervous irritation, and second, to render the patient less intolerant of topical surgical treatment.

In superficial mild cystitis with frequent urination and mild painful contractions of the bladder, prompt relief sometimes follows the daily application of a recital suppository containing two or three grains of ichthiol. In more aggravated cases opium may be substituted for the ichthiol. The irritating presence of concentrated urine should always be avoided by the frequent drinking of water. In order to avoid frequent urination during the night the drinking may be largely confined to the morning and early afternoon hours. To secure good sleep let the ichthiol suppositories be used two or three hours before bedtime to be followed if necessary by the opium or morphine suppository at bedtime.

The bowels should be kept normally free by mild laxatives. Drastic cathertics should be avoided. Uva ursi, triticum repens, the benzoate salts, buchu, eucalyptus and many other time-honored and classical remedies need no further mention. Rest, especially in the acute stage, is highly important.

TOPICAL TREATMENT.—The washing out of the bladder as a routine procedure is not approved. Irrigation, however, may be positively indicated for the removal of loose irritating shreds or other foreign matter.

The superficial forms of cystitis respond promptly to topical treatment. For these forms, if the cystitis is general, iodoform emulsion ten per cent. in oleum seasame may be thrown into the bladder with a hard rubber syringe. After two or three applications of the emulsion if the bladder is sufficiently tolerant a four ounce solution of nitrate of silver may be injected into the empty bladder and immediately displaced by free irrigation of normal salt solution. The strength of the solution may vary

* Adapted from Kletch.

according to the toleration. Begin with one per cent. and cautiously increase the strength if necessary even to five per cent. This treatment may be repeated every two or three days. Oftentimes two or three mild injections will effect a cure.

In many cases the infection is localized and when localized is usually confined to the trigone or inner end of the urethra. The silver application should then be local and confined only to the affected part. It may be made of any desired strength by means of a cotton swab through the cylindrical cystoscope and kept within bounds by the immediate instillation of salt solution. Mild infections in the trigone often yield completely to a single treatment. Mild fissure cystitis is promptly and permanently cured by this means but aggravated cases may require the solid stick. Accompanying urethritis should be treated simultaneously with the cystitis.

When the infection has caused deep infiltration into the bladder wall as in exudative or diphtheritic cystitis, the treatment is to be conducted in two stages; first, wash out the bladder to remove the shreds and other purtid material; second, apply the disinfectant. In washing out the bladder use small quantities of fluid and repeat until the fluid returns clear; then apply the disinfectant, preferably the silver nitrate.

If the secretion on the bladder wall is mucoid in character and stringy it is better to use salt solution than pure water. When the bladder is so painful as to resist all efforts at treatment it must be anesthetized with 10-20 c. c. of a four per cent. solution of antipyrin and this should be left in the bladder about twenty minutes. If treatment leaves the bladder very painful, cupping, hot applications or opium suppositories are indicated.

Cystitis with granulations or ulcus requires a very long time for healing and this is best accomplished with the silver nitrate in solution or in the solid stick.

In exfoliative cystitis the cause of the disturbance in the circulation should if possible be removed and the gangrenous membrane taken away by means of forceps. A permanent catheter should then be inserted to protect the bladder from the results of distention and for the injection of anticeptic solutions. In these cases the systemic condition is very grave and requires the maximum degree of support.

Surgical Treatment.—My experience in the surgical treatment has been confined to the cystitis of women. I therefore exclude from this part of the subject all special consideration of cystitis in the male. The following procedures are submitted:

1. Dilatation of the urethra.
2. Vaginal cystotomy.
3. Curettage of the bladder.
4. Lithotrity.
5. Extra vesical operations.

1. DILATATION OF THE URETHRA.—The indications for this operation are as follows: (*a*) To cure localized cystitis in the region of the trigone, commonly called trigonitis and fissure at the neck, so-called, fissure cystitis. The mode of cure in fissure cystitis is doubtless similar to that of anal fissure by dilatation of the sphincter ani muscle. (*b*) To enable the operator to see and treat surgically or topically vesical ulcers, vesical hemorrhoides, small growths, and other affections of the interior of the bladder, and to permit the crushing of stone.

2. VAGINAL CYSTOTOMY.—This is the formation of an artificial vesico-vaginal fistula. It opens the way to intra-vesical topical treatments and operations. Through this opening tumors may be removed and diseased surfaces cauterized or curretted. In chronic cases of severe long continued and unrelieved suffering colpocystotomy has by giving the bladder complete rest, furnishes immediate and unspeakably relief. The operation may have two objects: first, palliative; second, curative. In a certain proportion of cases the disease in the bladder and upper zones of the urinary tract is so extensive that the operation can only be palliative, that is, an anatomical cure is sometimes impossible. In some of these cases the bladder is contracted to the capacity of perhaps one-half ounce. No one would think, under such conditions, of making the secondary operation for the closing of the fistula. In many other cases the artificial opening may be only temporary. It gives the best opportunity for direct local treatment to diseased parts of the bladder and for a most effective vesical douche which can be thrown in through the urthra and allowed to flow out through the fistula and vagina. I have in mind numerous cases of chronic cystitis which have been cured by this method and in which upon subsequent closure of the fistula, the cures, if not anatomically complete, were at least symptomatically satisfactory. In some of these cases the very much contracted bladder finally resumed its physiological caliber.

Colpocystotomy may be indicated for the removal of any foreign bodies; it also furnishes an opening for the cauterization or curettage of ulcers or elucoplakia.

3. CURETTAGE OF THE BLADDER may be made through the tubular cystoscope, but better through an artificial vesico-vaginal fistula. It is indicated in indolent ulcers especially those of tubercular origin.

4. LITHROTRITY AND LITHOTOMY.—A stone in the bladder may be crushed through the urethra or removed through an artificial vesico-vaginal fistula. A small stone, or rather foreign-body may be removed entire through the dilated urethra. Prompt relief from cystitis usually follows.

EXTRA VESICAL OPERATIONS.—Parametritic, perimetritic or tubal abscess may, by rupture into the bladder, cause cystitis. Incision, evacuation and drainage of the pus cavity or removal of the pus sac is usually followed by prompt cure.

As a final stage in the treatment of cystitis the bladder if contracted may sometimes be made to return to its normal size by methodical distention with increasing quantities of salt solution, but this should only be undertaken after the cystitis has been cured.

SUMMARY.

1. The conditions which were formerly considered the prime causes of cystitis have receded to their proper place and must be estimated only as predisposing causes.

2. The recogniton and appreciation of pathogenic bacteria as the exciting causes of cystitis is essential to a scientific understanding of its pathology; etiology and treatment.

3. Alkalinity of urine depends upon the action of certain bacteria notably the proteus vulgaria, in the decomposition of urea. The bacillus coli communis which is one of the most frequent causes of cystitis is one of a class which does not decompose urea and therefore does not produce ammoniacal urine. Contrary to the older opinion, alkalinity is not the rule; on the contrary in the majority of cases the urine remains acid. Alkalinity if present is often the work of microbes secondarily introduced.

4. The classical symptoms of vesical pain, frequent urination and pus in the urine are wholly inadequate as a basis for the diagnosis of cystitis. Moreover the condition called cystitis has receded from the rank of a distinct disease to that of a symptom and should be so regarded. The mere recognition of the fact that cystitis exists is not a diagnosis. A fact is not a diagnosis, and the recognition of cystitis may by contrast with that of its complications be of very minor importance.

5. The diagnosis must comprehend not only the presence of infection in the bladder but what is more important it must embrace the source routes, type and complications and the variety of the inflammatory reaction. Simple uncomplicated inflammation of the bladder is rare.

6. The endoscope and cystoscope can alone open the way to efficient exploration and diagnosis, can alone define the indication for topical or surgical treatment, but more essential can alone prepare the way for the examiner to distinguish between cystitis and a wide variety of other urinary affections of the bladder, urethra, ureter and kidney. One is astounded at the revelations of the cystoscope in the recognition of most important lesions which must otherwise have passed unobserved.

7. The washing out of the bladder as a routine measure is not approved. The injection of disinfectants is indicated only in general or nearly general cystitis. For localized cystitis direct applications to the part affected should be made through the endoscope.

8. Dilatation of the urethra is indicated for localized cystitis at or near the neck of the bladder. The efficiency of the procedure for such localized cystitis has given it an undeserved recognition in the treatment of general cystitis which under cystoscopy it cannot now retain.

9. The most valuable disinfecting topical application in cystitis is the nitrate of silver.

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GONORRHŒA.

DIAGNOSIS.—Neisser maintains that the demonstration of the gonococcus is the only reliable method of diagnosing gonorrhœa in prostitutes. Many cases of undoubted gonorrhœa would escape recognition if clinical evidence alone were relied upon. Several examinations should be made if the gonococcus is not found at first.

According to Chauncey D. Palmer, gonorrhœa in the female is especially prone to attack and linger within the urethra, cervical canal, and the canals of the vulvo-vaginal glands. These are the first and most vulnerable points of attack. Secretions from these places are to be sought, for purpose of microscopical examinations. Gonorrhœa in the female almost always leads to sterility. Sometimes, however, pregnancy follows its occurrence and apparent relief or cure. Not only are such women more apt to have ectopic gestation, but they are particularly prone to attacks of puerperal fever of the metroperitoneal type.

H. Greenberg says that in many cases of gonorrhœa, although the microscope fails to show gonococci, yet it is evident that they exist latent in some folds of the urethra and are liable to regain their virulence under favorable conditions. The same is true in the female; prostitutes apparently free for some time from gonorrhœa nevertheless infect the male urethra.

J. R. Eastman regards the diagnosis of acute gonorrhœa in women as comparatively easy, even without the microscope. A discharge of tenacious pus is usually detected or greenish or yellow streaks upon the linen may alone be in evidence. Erosion may be present upon the skin, upon the labia majora, or in the inguinal and gluteal folds. The labia minora, the clitoris and its prepuce, and the hymen, if present, are red and swelled. The urinary meatus is found to be congested and ectropic. The mouths of the ducts of the vulvo-vaginal glands are deeper in color, gaping, and tender. They discharge, instead of their normal glycerin-like secretion, pus-laden mucus. The surface of the vagina proper presents no great change The urethra is the seat of predilection of gonorrhœa in women.

In gonorrhœa in the female P. Broese and H. Schiller do not consider the intracellular arrangement of the cocci as pathognomonic of acute gonorrhœa, as the gonococci are quite frequently found outside the cells. The diagnosis of chronic gonorrhœa may be established upon the shape and size characteristic of the gonococci and upon their peculiar reaction to the Pick-Jacobson method of staining. In acute urethritis a differential diagnosis can be made with greater accuracy by observing the clinical course than by microscopic examination. If the urethritis be non-specific the objective and subjective manifestations disappear spontaneously and with comparative rapidity, and the adjacent portion of the genital tract will not be involved. Too much reliance must not be placed upon the absence of gonococci from the secretion from the cervix, as their presence

in the secretion is most irregular. In thirty-six cases of acute gonorrhœa, in all of which gonococci were found, the cervix was, next to the urethra, the most common seat of the disease.

F. C. Valentine says that—if in a case of recurrent gonorrhœa marital reinfection can be excluded by (*a*) examination of the woman; (*b*) infarction of the crypts, glands and follicles by urethroscopy; (*c*) chronic residual posterior gonorrhœal urethritis by expression of the posterior urethra and posterior urethroscopy; (*d*) gonorhœal prostatitis by massage of the prostate—then one must look for gonorrhœal vesiculitis.

The local manifestations of the last three conditions are grossly the same, differing only in detail.

For such an examination it is best to place the patient on a sofa, lying on his back. The apex of the index-finger and the bed of the nail being tightly packed with soap and then thickly anointed with vaselin, the finger is gently inserted into the rectum. The other hand rests above the pubis to steady and press down the pelvic viscera. The pulp of the finger is turned toward the front of the patient, and lightly outlines the prostate, but exercises not even the slightest pressure on any part of it. If the operator desires to elicit evidence of chronic residual posterior gonorrhœa, he lets the finger glide from the prostate and exercises pressure, with increasing force, in a stroking motion forward from the lowermost margin of the prostate, endeavoring with each stroke to force the posterior urethra against the posterior aspect of the pubis.

The patient is then ordered to urinate, and, if this is the region affected, the urine will contain flakes, perhaps even filaments or shreds. Microscopy of these products of massage will reveal the character, probably gonorrhœal, of the posterior urethritis. If this results negatively, examination for prostatitis may be made in the same manner several days later. The size, shape, and hardness or softness of each lobe, as well as of the isthmus, should be ascertained; lobulation or smoothness should be elicited, depressible points located, and the protastic juice—if any exudes from the meatus—microscopically examined. If none escapes, the first urine the patient passes after this massage of the prostate should be centrifugalized for examination.

If the prostate is found to be normal, then the patient should be examined two or three days later for seminal vesiculitis. This is done in the same manner, except that the finger is passed up the rectum farther, beyond the prostate and to its sides. In health the seminal vesicles can be barely, if at all, felt. When enlarged by disease they assume the shape of more or less tensely-filled little sausages. In engaging the finger as high up as possible on these bodies, by curving the finger downward and toward the centre with increasing force, the seminal vesicles may be stripped of their contents. These are treated in the manner as described under the examination for prostatitis.

Ahman notes a case in which gonococci existed in the blood. The case was one of urethral gonorrhœa complicated with multiple arthritis, tenosynovitis, epididymitis, and nephritis, accompanied by attacks of pyrexia

During an attack of fever a syringeful of blood was taken from a vein and spread over four ascites-fluid agar plates. The results showed pure cultures of the gonococcus.

ETIOLOGY.—Cnopf regards gonorrhœa in childhood as twice as common below as above the age of 6 years. Girls are much more frequently infected than boys. In only 1 per cent. of the cases noted was the disease attributable to immorality.

Joseph B. Bacon believes that many cases of rectal gonorrhœa are caused by using the same syringe that has been used for the vaginal douche.

Jadassohn reaches the following conclusions in regard to immunity and superinfection in chronic gonorrhœa :—

1. That there is no diminution in infectiousness in chronic gonorrhœa, —that is, it may produce an acute gonorrhœa in others : also that there is no immunization of the system through gonorrhœa of one of the organs, for a chronic urethral discharge may produce acute gonorrhœal ophthalmia in the same individual.

2. After gonorrhœa of any mucous membrane there is, as a rule, no immunity for that membrane even for a short time.

3. It is not known how a mucous membrane gradually becomes accustomed to the presence of gonococci, though for other individuals or mucous membranes they have lost no virulence. Wertheim showed that a mucous membrane affected with chronic gonorrhœa did not react to cultures taken directly from it, although it reacted to cultures taken from another patient.

4. In spite of this, it is certain clinically that some chronic gonorrhœas may become acute through superinfection with their own cocci.

5. The mucous membrane does not become so used to the presence of the cocci that the latter can live as saprophytes on it after the tissue has become normal. On the contrary, the inflammation always remains for a time after the cocci have disappeared.

6. The superinfection of a chronic gonorrhœa with gonococci from another source is an unsettled question. From the author's experiments, a chronic gonorrhœa may become acute through (*a*) the increase of its own gonococci ; (*b*) inoculation with gonococci from another patient. In other cases it reacts to neither of these causes, and proves an exception to the rule of the absence of immunity.

COMPLICATIONS.—Harvey W. Cushing has reached the following conclusions as the result of the study of two cases of diffuse gonococcic peritonitis :—

1. The gonococcus is capable of causing a specific infectious disease—namely : gonorrhœa—and at the same time other and less specific pathological conditions.

2. There is experimental proof that in certain small animals the gonococcus can set up acute alterations in the peritoneum homologous with the acute septic serositides in man, but differing from these in their tendency to rapid and spontaneous healing.

3. Hitherto there has been wanting conclusive proof that, in the peritonitides attendant upon gonorrhœa occurring in women, the gonococcus was solely or chiefly concerned. The inflammations had been carefully regarded as mixed infections and chemical inflammations.

4. The two cases above noted bring for the first time convincing evidence of the existence of a diffuse. general inflammation of the abdominal cavity caused by the gonococcus.

5. It has been recognized that extension of the gonorrhœal infection from the genital organs to the peritoneum may occur in the puerperal state; a similar sequel is shown to be possible during menstruation.

6. Such ascending forms of gonorrhœa doubtless under ordinary circumstances remain localized in the pelvis, and rarely demand surgical investigation in the acute stage.

7. A general involvement of the peritoneum such as occurred in two cases observed must either be rare or unrecognized, and may depend upon some especially receptive condition of the serosa or virulence of the organism.

8. The peritoneum is not more immune than are the pericardum or endocardium to gonococcic infection, and, being more exposed, suffers more commonly in females, although the relatively-benign course of the disease makes it a rare condition to come to the attention of the surgeon in the acute stages.

PATHOLOGY.—According to Leleneff, gonococci have a most destructive action on cellular protoplasm, causing it to degenerate and liquefy, leaving only a feebly-staining, vacuolized nucleus. As similar changes have been observed both in cells containing gonococci and in those cells free from them, this destructive action must be due to some toxins produced by the gonococci. The latter chiefly invade epithelial cells and leucocytes. It was formerly supposed that gonococci only invaded columnar epithelium, and did not penetrate deeper than the submucous layer, but it is now proved that they may invade squamous epithelium and connective tissue, and even penetrate between the bundles of muscular fibres.

TREATMENT.—Robert W. Taylor believes it proper and justifiable to employ the abortive treatment in all cases that are seen sufficiently early but thinks success in this line will be the exception rather than the rule The routine treatment to be adopted in the average case includes careful regulation of the diet, with the exclusion of those articles that render the urine irritating, the enforcement of a light diet, and the administration of alkalies, with hyoscyamus. In the acute stages hot embrocations of concentrated boric acid should be employed for the first few days, associated perhaps with gentle injections of small quantities of this solution. Upon the subsidence of the distressing symptoms, mild antiseptic injections, beginning with boric acid and continuing with potassium permanganate, should be used. For this a reflex catheter is to be used, if the anterior urethra alone be involveed, and an ordinary velvet-eyed catheter (No. 10 or 12, French) for the posterior urethra. When acute suppuration

begins to subside, the patient may use, with an ordinary penile syringe, injections of zinc, lead, alum, tannic acid, or hydrastine, as a basis. The indications for treatment, based upon the pathological findings of the stage of the decline of the inflammation, are to cause absorption of the infiltration in the submucous layer and to restore the tonicity of the vessels and the epithelial layer of the urethra. No preparation meets all these indications so well as argentic nitrate. The strength of the silver solution and the frequency of injection must be governed by the character of the secretion. As long as there is much free pus and no epithelium in the specimen, the weaker solutions should be used, but, as soon as epithelial cells begin to appear, the strength of these solutions should be gradually increased.

Kornfeld recommends largin, a gray powder produced by the action of an ammoniacal solution of oxide of silver on an alcoholic solution of the dry product of decomposition of the paranucleoproteids, In a solution of 1 in 4000 it kills the gonococci.

Pezzoli has reached the following conclusions in regard to largin gonorrhœa: 1. Largin as an antigonorrhœic is at least equivalent to the other silver compounds, 2. It surpasses the other silver-albumin compounds with regard to the power of killing the gonococci. 3. It penetrates more deeply with dead organic substances. Treatment should begin early to prevent immigration of the gonococci into the deeper parts of the mucous membrane. It may be injected in 1 to 1½ per cent. solution several times a day and retained in the urethra for from ten to thirty minutes.

Goldenburg is in accord with Neisser that protargol surpasses all other agents hitherto in use for the treatment of gonorrhœa. If the disease is localized in the anterior urethra the patient should inject 3 drachms of a 1 per cent. solution with an ordinary urethral syringe, should retain the solution for from ten to fifteen minutes, and should repeat the practice three times a day. In posterior urethritis a solution of ½ to 1 per cent. is introduced into the deeper urethra by a Guyon instillator.

E. Finger has given protargol, the new silver-proteid compound, a careful trial in forty cases of acute gonorrhœa, most of them being seen during the week of the infection, and none of them having been previously subjected to other treatment. He agrees with Neisser that protargol is a very efficient anti-gonorrhœal remedy, which, if employed at an early period, exerts a prompt and favorable influence upon the course of the disease, in the majority of cases, arresting all acute manifestations, causing rapid disappearance of the secretion and gonococci, preventing extension of the process to the posterior urethra, and usually giving good results even in fully developed cases of anterior and posterior urethritis. The injections of protargol (¼ of 1 per cent. to 1 per cent.) should be kept up for a number of weeks, after which astringents should be resorted to in order to prevent recurrenee.

Paul Noguès thinks that protargol injection should be made as soon as the patient with gonorrhœa presents himself. Three are given each day; the morning and afternoon injection should be retained five minutes, the

evening thirty. Since it is tiresome to keep the urethra closed with the fingers for this one injection of a half-hours duration, six, of five minutes each, are substituted. After a few days the evening injection only is necessary, and this should be continued for three or four weeks. A syringe of at least 4 drachms' capacity should be chosen. The strength of the solution is from 0.25 to 0.50 and later to 1 per cent.

Saloschin has used protargol in the gonorrhœa of women and thinks that it is likely to be serviceable in this disease. In 8 cases of acute disease it was applied in 5 per cent. solution through a speculum to the cervical canal, the vagina was treated with a 2 per cent. solution, and a tampon moistened in the first-named solution was left in position. In the sub-acute variety, and especially complicated with cystitis, irrigation of the bladder with a ½ to 1 per cent. solution gave variable results in ambulant patients.

Colombini finds protargol valuable in gonorrhœa. He always keeps a 10 per cent. solution, which is prepared by pouring 5 cubic centimetres of neutral glycerin into a small mortar, and adding to it 10 grammes of protargol, stirring up the mixture with a glass rod till a thoroughly homogeneous moist paste is produced. This is next diluted with 95 cubic centimetres of cold sterilized water, and shaken up till a perfection solution is produced; this solution is kept in a colored bottle in a dark place. As required, a 0.25 per cent. solution is made by mixing 2½ cubic centimetres of the standardized solution with 97½ cubic centimetres of sterilized water; a 0.50 per cent. solulion by mixing 5 cubic centimetres with 95 cubic centimetres of water; a 1 per cent. by mixing 10 cubic centimetres, and a 2 per cent. by mixing 20 cubic centimetres of the standardized solution with 90 and 80 cubic centimetres, respectively, of sterilized water. These solutions are used as urethral injections according to the stage of the disease. In the acute stage the 0.25 per cent. solution is used. The patient first passes water, and then the glans and prepuce are washed with some antiseptic solution and a syringeful of protargol is first injected in such a way that sufficient room is left for the outflow of the injection; then the syringe (which is made to hold 6 cubic centimetres) is refilled to two-thirds of its capacity and the solution is injected very slowly, the meatus being completely blocked, so that it may not run out again. The syringe is carefully removed, the patient being directed to keep the meatus closed with his fingers for fifteen minutes, and not to pass water an hour. As the inflammation subsides, the strength is gradually increased up to 2 per cent. The solution is injected at the temperature of the air. The first day one injection is given, the next one in the morning, and another in the evening; the third and following days one in the middle of the day as well. The injections are continued for twenty days after the cessation of the discharge, the daily number being gradually diminished to one.

Behrend notes twelve instances of gonorrhœa in males (first attack) in whom, after one or two days the gonococci disappeared under the use of ½ to 1 per cent. solutions of protargol. This remedy had no influence upon the clinical symptoms, the discharge continuing. Better results

were obtained by the use of other astringents, as the alum injection, although the latter does not destroy the gonococci. The disadvantage of the protargol is that it acts only on the gonococci which it can reach, for it does not penetrate into the tissues.

Gravagna has tested various new drugs—alumnol, protargol, argentamin argonin—in a number of cases of gonorrhœa. Microscopical examination showed the presence of gonococci long after the onset of treatment. The disease is not cut short by these drugs; although there are no advantages in these drugs over the older ones, they have no disadvantages.

Chassaignac has treated 500 cases of gonorrhœa in various stages of the disease with chlorinated soda. All cases improved except those which were too acute to syringe, and some cases which were very chronic. Three solutions of different strengths—1 in 48, 1 in 32, and 1 in 24—were used, the strong for old cases, the medium for most cases. The solution must be pure and comparatively fresh. It is used three or four times a day at first, afterward twice a day, and injected with a syringe holding three-eights of an ounce, the injection being retained for two or three minutes. Treatment is continued till the "morning drop" disappears and the threads have ceased to appear in the urine after moderate indulgence in alcohol.

Chauncy D. Palmer regards copaiba as still the most reliable remedy for internal medication. For specific inflammations of the urinary, not genital, tract it is indicated. When vaginal or intra-uterine it can he no good. The mercuric bichloride is one of the most safe and efficient parasiticides for this disease. Urethral and vesical injections should not exceed 1 to 20,000 to 1 to 30,000 in strength, but the vagina and uterus will easily bear from 1 to 1000 to 1 to 2000. A frequent practice personally has been to thoroughly scrub the vagina and vulva with German green soap, irrigate it thoroughly with hot water, and forcibly mop the whole vaginal and vulvar tract with the sublimate lotion 1 to 2000 strong. If the disease is intra-uterine, the patient should be anæsthetized, and the uterine cavity dilated, curetted, and washed out with a lotion of the same strength. After the cavity has been dried with sublimate gauze, about 20 to 30 drops of pure carbolic acid may be injected with an appropriate syringe.

J. F. W. Ross believes that the currette should not be used in the presence of acute gonorrhœa, as it is one of the surest ways of causing extension of the disease to the tubes and ovaries.

In gonorrhœal epididymitis Letz uses a 10 per cent. guaiacol ointment made with vaselin or a 5 per cent. ointment if the skin is tender. The scrotum is first washed with soap and afterward with ether. The ointment is applied during the first or acute stage of the disease, when there is pain and swelling of the testicle and pyrexia. These symptoms disappear in three to five days. In chronic epididymitis the guaiacol is best replaced by Zeissl's ointment of a 1 to 2 per cent. extract of belladonna, with equal parts of simple ointment and unguentum diachyli. Fifteen

grains of salol should be given thrice daily as an adjunct to the treatment. Fifty cases of gonorrhœal epididymitis have been successfully treated in this way.

C. S. Murrell advises the prolonged use of hot water irrigations in both acute and chronic gonorrhœa. A soft catheter is passed to within one inch of the prostatic urethra. It is then connected with a "gravity apparatus," in which the water is gradually heated up to the tolerance-point. The stream flows through the catheter and then back between catheter and mucous membrane, thus flushing out the anterior urethra. Several quarts of warm water are thus passed, some patients having a tolerance-point as high as 180° t 190° F.

Aboutkoff found in 5 cases of gonorrhœa in which the temperature rose to 104° F. and upward, owing to complications, that the urethritis was quickly checked, due to the sensitiveness of gonococci to changes of temperature.

Dupuain finds the following injection useful in acute gonorrhœa :—

℞ Methyl salicylate, artificial, 15 minims.
Bism. subnit., or, better, salicylate, 2½ drachms.
Liquid vaselin, 3½ ounces.
M. Sig.: Shake well before each injection.

J. B. Bacon treats gonorrhœa of the rectum by keeping the patient at rest and using a double tube just within the sphincters for irrigation purposes, gradually inserting the tube with an outlet for the flow of water. The bowel should be irrigated several times daily with hot water or with a mild antiseptic solution.—*Monthly Cyclopedia.*

CONVULSIONS IN CHILDREN.

ETIOLOGY.—In three children otherwise healthy Darey has noticed convulsions accompanied by stupor caused by adhesions of the foreskin to the glans penis. In every case the symptoms promptly disappeared on removal of these adhesions.

C. G. Lucas says that he always makes it a rule, when called to see a child with convulsions, to make a thorough examination, even inspecting the prepuce of the male, to ascertain, if possible, the cause. The majority of cases of convulsions in children personally seen have occurred in scarlet fever.

P. F. Barbour thinks that the causes of convulsions vary somewhat with the age of the child. In a child under six months of age the convulsions are nearly always due to cerebral cause or a marked reflex. In an infant between six months and two years of age the predisposition is almost always rachitic, though improper food by itself is sufficient to cause it. After two years of age the convulsions are usually either meningeal or epileptic. At the beginning of acute infectious diseases, or some days after the onset of these diseases, most children will develop convulsions if the temperature rises sufficiently and with sufficient rapidity. When a convulsion occurs three or four days after the onset of scarlet fever or diphtheria. it is generally due to nephritis or beginning uræmia.

Thomas Butler thinks that convulsions in children between the ages of six months and two years are not nearly always rachitic in character. The majority of cases of convulsions that he has seen in children have been between the ages of six months and two years, and none of them were rachitic.

According to Walter F. Boggess, Sachs divides convulsions into the following classes :—

1. Convulsions occurring in first few days of life are, as a rule, the result of meningeal hæmorrhage, due either to protracted labor or instrumental delivery. Personally it is thought that there are few cases where instrumentation, properly employed, ever produces permanent injury.

2. Convulsions may be due to organic disease of the brain, tumor, abscess, meningitis, or vascular lesions.

3. They may (and do generally in children under two years of age) mark the onset of acute infectious disease. The rigor of the adult is shown in the child as a convulsion.

4. Convulsions of reflex origin. Here, according to personal experience, is found the most common source of etiological explanations. There is such a myriad variety of peripheral troubles that can, and sometimes do, bring about such convulsive seizures that it is not surprising that one looks to these first in the examination : dentition, adherent prepuce (very common), burns, sores nasal obstructions, ocular deficiencies, overloaded colons and stomachs, presence of intestinal parasites, lumbricoids, pin-worms,

thread-worms, etc., stomachic and intestinal indigestions. In these indigestions, however, the cause is probably not so much reflex, as it is due to conditions of autointoxications, which factor was overlooked by the older writers. These should be classed under the following heads:—

5. Convulsions due to organic and inorganic poisons, such as ptomaines, toxins, uræmia, lead, and other metallic salts. In this class the convulsions of the infectious diseases might be placed.

6. Convulsions from exhausting diseases, and anything that lowers vitality, lessons development, interferes with proper nutrition and assimilation: rickets, scrofula, rheumatism, severe loss of blood,—the hyperæmic condition of the cortex explaining the relative frequency of convulsions in rickets.

7. Convulsions may sometimes be idiopathic or hereditary. While the convulsion is not inherited *per se*, there is an inherited susceptibility of the nervous system to the various nervous disturbances: neurotic tendency. It is not uncommon to find frequent convulsive seizures in a child for which no assignable cause can be given except that it has been for generations a "family trait."

Convulsions may occur after traumatic injuries as an expression of shock.

Treatment.—According to Foulis, cyanosis in convulsions is due to the obstruction offered to the free ingress of air into the lungs by the falling back of the tongue on to the wall of the pharynx. By simple lowering forward the base of the tongue this obstruction is done away with, air passes in freely, and the cyanosis rapidly disappears. Pulling forward the tip of the tongue when the tongue-muscles are lax is not nearly so useful.

In the treatment of infantile convulsions P. F. Barbour uses chloroform, if at hand; hot water is probably the next best thing.

Louis Fischer says that the history of an overloaded stomach, with a consequent high fever and ptomaine poisoning, and the absorption of this poison-causing toxæmia, will call for, first cleansing of the stomach with lavage, using a normal saline solution—cleaning as much as possible therefore with warm salt water until the gastric contents have been removed. Meanwhile, a strong mustard foot-bath can be used to relieve the cerebral hyperæmia, and, if necessary, a leech can be applied behind each ear over the mastoid process of the temporal bone.

Leeching can also be accomplished by applying one leech to the alæ nasi.

W. F. Boggess states that in an attack of convulsions the child should at once be put in a hot bath (90° to 97°) with cold to its head. A strong child may stay in the bath ten or twenty minutes, a delicate child from two to five minutes. Bowels should be at once unloaded by a large enema. If overloaded stomach is suspected, wine of ipecac or alum and molasses, etc., should be given. The child should then be placed on a cot or bed, and if convulsions continue ether or chloroform may be given tentatively

to relieve symptoms until other systemic medicaments can be employed. The chief of these are the bromides and chloral-hydrate. If the child can swallow, from 2 to 5 grains of bromide of potassium or bromide of sodium with from 1 to 2 grains of chloral should be given every fifteen to thirty minutes for four to six hours to a child of one or two years. If the child cannot swallow, double this amount can be given by the rectum. While opium is of great value in controlling nervous excitement and even convulsions itself, it should be given guardedly.

It would be unwise to give opium in great congestion of the brain or in coma. It is best administered by hypodermics in form of morphine, in $\frac{1}{20}$ to $\frac{1}{60}$ grain doses. Nitrite of amyl is highly recommended in certain forms of convulsions given either by the mouth in $\frac{1}{2}$ drop doses or by inhalation. Constitutional treatment should at once be instituted in cases due to systemic conditions, rickets, etc. Musk, valerian, and asafœtida are sometimes useful adjuncts in the treatment.

H. N. Leavell thinks the treatment should be directed toward relieving the constitutional condition which gives rise to the convulsion rather than to the relief of the paroxysm itself. The application of heat will do more toward relieving the condition and bring about a better circulation than will the administration of a general anæsthetic.

A combination to empty the bowel, to tone down the nervous system, and reduce the fever at the same time is calomel and phenacetin.—*Monthly Cyclopedia.*

A CLINICAL STUDY OF TWENTY-FOUR CASES OF PARALYSIS AGITANS.

WITH REMARKS ON THE TREATMENT OF THE DISEASE BY JOSEPH COLLINS, M.D.,

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Paralysis agitans, or creeping palsy, has had but little added to its clinical delineation since the original description by James Parkinson in 1823. Despite the many careful investigations of the nervous system that have been made by the aid of modern methods, the nature of the disease is still unknown. Although classified as a functional nervous disease, pathological changes are almost invariably found in the central nervous system after death, especially if the disease has existed for a long time. The object of the present study is not to throw light on the pathogeny of paralysis agitans, but to consider its attributed and apparent causes, to estimate its relative frequency, to determine the initial symptoms and mode of onset, and to learn the factors that influence the course of the disease. The cases are taken from dispensary, hospital, and private practice, in about equal proportion. In order to estimate the relative frequency of paralysis agitans, we have taken the statistics of the clinic for several successive months, as it is impossible to approximate the number of nervous diseases that have been seen during the encounter of these twenty-four cases of paralysis agitans. In five hundred and thirty-six successive patients in the clinic, there were seven undoubted cases of paralysis agitans, and one doubtful case, making a percentage of 1.30. This is much higher than that given by many writers, such as Berger, who found a percentage of 0.62 in six thousand cases, although our figures are practically the same as those given by Charcot. The fact that the clinic is made up in considerable measure of patients sent there by physicians for consultation and advice may explain the relatively large percentage in our statistics. It is easy to understand that such statistics, therefore, have a restricted value in showing the frequency of paralysis agitans relative to all nervous diseases.

The accompanying table shows the relationship of age, nationality, and heredity to the occurrence of the disease:

Nationality.

Nation.	Males.	Females.
United States	2	2
Holland	1	
England	1	
Germany	2	2
Ireland	9	2
Austria	1	
Russia	2	
Total	18	6

Age.

Decades.	Males.	Females.
Thirty to forty years	1	
Forty to fifty years	6	1
Fifty to sixty years	5	2
Sixty to seventy years	4	3
Seventy to eighty years	2	
Total	18	6

Heredity.

	Males.	Females.
Direct heredity	3	1
Indirect heredity	3	1
No heredity	8	3
Unknown	4	1
Total	18	6

The most striking feature in reference to nationality is the remarkable predominance of the Irish race. Very nearly one-half of all the cases were of this people. When we consider that the constitution of the clinic is not conspicuously Irish, it will readily be seen that this preponderance is not to be explained by accident. It may be that the Irish, being a very emotional race, are more vulnerable to the attributed exciting causes of paralysis agitans: shock, anxiety, worry, depression, etc. It is not improbable, however, that it is in part explainable by the entirely different mode of life which the people of this race have when they take up their abode in this country, as no one has pointed out that the Irish are particularly afflicted with paralysis agitans at home. In other words, it would seem to be as much environmental as inherent. Another peculiar feature of the statistics concerning the nationality of the patients is the relative infrequency of the disease in Irish women, contrasted with the women of other nationalities. For instance, the Americans and Germans furnish an equal number of men and women. Many German and French writers maintain that there is very little relationship of sex to the occurrence of paralysis agitans. It will be seen that our statistics show that the occurrence of the disease is three men to one woman. Gowers gives the proportion in his experience as five men to three women.

Our statistics regarding the age at which the disease is most apt to show itself are in accord with those of most writers on the subject. The disease occurs most often in the fifth decade, and gradually diminishes

until the eighth decade. Unlike many other writers, we have encountered two typical cases after the seventieth year. No patient under thirty years of age has been under treatment during the period of personal direction of the clinic, although previous to that time a typical case of paralysis agitans in a boy twenty-two years of age was under observation for a prolonged time. This case is not included in the statistics.

A fact brought out by our study that is not in entire accord with the statements of other writers on this point is the influence of heredity. In no less than four cases was there a straightforward history of direct inheritance. In one case the father had paralysis agitans, while the mother and a maternal uncle died with some form of paralysis. In a second case the mother had a disease similar to that of the patient, the shaking being particularly marked when she was excited. In a third case, the father had an exactly similar disease for the last eight years of his life, and it is thought a paternal uncle was similarly afflicted; while in a fourth case, a woman, the father and a paternal aunt had exactly the same disease. Naturally, this information was obtained only from the patient or the descendants of the patients, and is therefore liable to serious errors. A very careful inquiry was made in every case on this point, with the above result, which is so at variance with the usual teaching on this subject that we are ourselves loath to accept it as absolute fact. A history of indirect heredity—that is, of manifestations of nervous or mental disease in the family—was found in sixteen per cent. of the cases. Upward of fifty per cent. of the cases gave neither direct nor indirect neuropathic history.

In regard to occupation, the statistics show that the patients were very evenly distributed among upholsterers, plasterers, gardeners, saddlers, engineers, printers, laborers, sailors, mill hands, promoters, journalists, clerks, merchants and fancy workers. Neither the mentally harassed nor the physically overworked have a special liability to the occurrence of the disease. Workers out of doors develop the disease as frequently as indoor workers. The statistics further show that the disease is as likely to occur in one grade of society as in another. Of the six women, four were married, one was a widow, and one single; while of the eighteen men, sixteen were or had been married, and two were single.

Inquiry to determine the alleged causes of the disease did not result in obtaining satisfactory information. Only about thirty-five per cent. of all the patients were able to inform us of a distinct cause. The attributable causes were: 1. Shock attending the death of a beloved daughter. 2. Excessive and prolonged mental strain, incident to supporting a family. 3. Family trouble. 4. Constant exposure and becoming wet, incurred in occupation. 5. Contact of the hand with cold stone in winter, while employed in polishing marble. 6. An attack of grippe. 7. The sudden appearance of a strange black cat near her bed. 8. The discovery that an unmarried daughter was pregnant. 9. Being knocked down by a vehicle, but without consequent physical injury. 10. The discovery that all his savings had been lost. Thus it will be seen that the alleged causes were profoundly those that may be classified under the head of psychical or

emotional trauma. Our experience in this respect corresponds with that of others, although, perhaps, the proportion in which an attributed cause was elicitable was somewhat greater than in those of other writers. It has frequently been stated that acute and chronic diseases of various kinds have a predisposing influence to the occurrence of paralysis agitans. This statement is corroborated to a slight extent by our study. Of the six women, four denied any previous disease. One had had a fungoid growth removed from the uterus shortly before the occurrence of paralysis agitans; one had had chronic diarrhœa. A third patient had had yellow fever a great many years before the occurrence of the disease for which she came under our observation. Of the men, one gave a history of a blow on the head, after which he had been delirious for three months; but this had occurred so long before the manifestations of Parkinson's disease that it could not possibly have any influence. Another had had an attack of acute articular rheumatism before the manifestations of the disease; while a third, in whom the symptoms seemed to follow an attack of grippe, has already been mentioned. Two of the men had had yellow fever, eighteen years and forty years, respectively, previous to the manifestations of paralysis agitans. Only two of the twenty-four patients were hard drinkers or smokers, and in none was there a history of syphilis. As a matter of fact, the most striking feature of the personal history of all these patients was that they had lived temperate, wholesome lives, apparently devoid of undue strife or any uncommon burden. In a few cases the patients alleged that the onset of the disease was coincident with some annoying or exciting experience. For instance, one man was quite positive that the disease occurred immediately after leaving the witness box, where he had been subjected to a harassing cross-examination. Another patient dated the beginning of the tremor from the moment when he heard that all his savings had been lost, owing to the failure of a bank. But in both cases close inquiry revealed that muscular rigidity had antedated these experiences by a number of months. A third patient averred that the tremor developed while he was lying in bed convalescing from an operation for inguinal hernia, but investigation showed that the surgeon had diagnosticated paralysis agitans on the man's admission to the hospital.

This brief review of the ætiology of paralysis agitans shows that the most important factors are age, sex, nationality, morality, violent emotions, especially depression, direct and indirect heredity, and infectious diseases. Apart from the peculiarities of our own statistics relative to these factors, and which have already been mentioned, the only point worthy of note is that traumatism was not an alleged or exciting cause in a single instance.

Symptoms.—The disease usually develops in a most insidious way, although it may come on with considerable abruptness. The first complaint may be of profound and unattributable weariness, usually of one upper extremity. This may or may not be associated with trembling of the extremity, but the latter is sure to follow. With the feeling of

weight, fatigue, and unwieldiness of the extremity, a peculiar form of muscular rigidity develops. This rigidity is more apparent to the patient than it is to the physician on passive movement. Although this rigidity develops first in one extremity, it soon passes insidiously to the others, and eventually is manifest in every part of the body. It is responsible for the peculiar, immobile, expressionless countenance of the patient's face, for the bowed condition of his body, and for the slight flexion in all the articulations of the long bone. Moreover, the contraction which is at the bottom of the spasticity conditions the patient's gait, with its short, shuffling steps and tendency to run, called festination; inclination to fall forward (propulsion), as well as the tendency to fall backward (retropulsion), especially if the patient starts to move in that direction, and the inclination to fall sidewise (lateropulsion). It is responsible likewise for the high-pitched, unmodulated, monotonous vocalization and the fixed manner of speech. The tremor, which is considered an essential feature of the disease, may never develop; but usually it shows itself a few weeks or months after the rigidity and fatigue in one hand, oftenest in the left. Occasionally it precedes the occurrence of rigidity of the muscles. It gradually creeps up to the shoulder, accompanied by a peculiar subjective sensation of unrest, and passes across to manifest itself in the upper extremity of the opposite side. Later it shows itself in the lower extremities, and finally, as a rule (although this is contrary to the usual statement), in the cephalic extremity. It has three characteristics: First, its location, usually in the hands, which are already brought into a pencil-holding position by the muscular rigidity. It oftentimes causes a forward and backward movement of the thumb and the index finger comparable to those of rolling a pill, often called a pill-rolling movement. Second, its rapidity, from five to six a second, therefore standing midway between the slow tremors and the rapid or fine tremors. Third, it continues while the patient and his extremities are supported and at rest. Although it usually lessens in intensity when the patient attempts and performs voluntary movement, it oftentimes does not do so, and may indeed become slightly exaggerated. Occasionally it stops without apparent cause, but reappears without attributable exciting factors. It is increased by all forms of psychical excitation and by physical indulgence. It may involve all the extremities, and usually does so before the patient passes into the terminal stage, wherein the rigidity and immobility again have sway, as they often do in the beginning. In addition to these symptoms, which are looked upon as the leading features, there are many associated phenomena, all of them apparently perversions of the sympathetic nervous system. There are subjective sensations of heat, accompanied by local flushings, especially of the face and chest, by local and general elevation of temperature; attacks of sialorrhœa, diarrhœa, and outbreaks of sweat, which may or may not coincide with the flushings just spoken of; with sluggishness of the pupils on exposure to light; and profound amyosthænia, both paroxysmal and continuous. The sensory sphere is usually entirely spared. The cutaneous and deep-seated reflexes are normal, unless the phenomena of the latter are prevented by the

rigidity. The bowels and the bladder preserve their function, save in the manifestation of hurried action of the sphincters, and the digestive organs remain in fairly good working order. The patient is non-emotional, and exhibits a degree of contentment which is strikingly at variance with that which one would expect to find in a normal man or woman who had been deprived of their capacity to enjoy life or earn their daily bread, and who have probably been apprised of the eventual outcome of their disease. Nevertheless there is no dementia; at least, not until the disease is nearly at its end. Aside from the subjective sensations of fatigue, oppressive warmth, fullness in the head, and difficulty of prehension and locomotion, the patient's most frequent complaint is of sleeplessness and inability to get refreshing rest.

The course of the disease is uniformly progressive. In this it is strikingly in contrast with a disease which tradition maintained, and some still teach is frequently mistaken for paralysis agitans—viz., disseminated insular sclerosis, which is almost invariably progressive and retrogressive. The disease lasts from five to thirty years. As a rule, the patients pass into a bedridden and aesthenic condition, which makes different parts of their body vulnerable to infections, such as tuberculosis and pneumonia, and they die from these or other intercurrent disease.

Despite the fact that the symptoms of paralysis agitans are very characteristic and constant in their occurrence, the early clinical features of the disease are really quite variable. For instance, the time that elapses between the occurrence of a symptom that will be sufficient to direct the physician's attention to the real nature of the disease and the recognition of the serious nature of the complaint by the patient, is very variable. This is well illustrated by a few examples. One man observed that the left index finger was tremulous when he walked in the street. Eight years later he complained of cramps in the calf and instep of the left foot. Six months later still there was very characteristic agitation of the entire left upper extremity; while in the course of two years from this time all the extremities were affected, and the patient was in an advanced stage of the disease. The facies, the attitude, the tendency to propulsion, the speech, the drooling, etc., were all most typical of Parkinson's disease. In this instance the time between the initial symptom and the occurrence of characteristic symptoms was extremely protracted. Another point worthy of note is that the tremulousness preceded the muscular rigidity, this formula being usually reversed. Another patient came to the clinic on account of peculiar sensations in the head—a fullness and feeling of distention. He also complained of heaviness and weakness of the extremities. The slight, rather jerky tremor which was noted in the right hand he made light of, as it did not bother him. The facies, speech, vasomotor disturbances, and slight rigidity of the extremities were sufficient to warrant the diagnosis. Twelve months later we saw him again, when he had typical tremor and rigidity of all four extremities. Another patient avers that the initial symptom was a tendency to stagger, as if he was drunk, which preceded by six months an agitation of the right hand

first noticed on writing. An interesting feature of this case was that he was one of the very few that showed any considerable mental depression. Another patient complained of stiffness in all the joints for upward of four years before any tremor showed itself. One woman assured us that the initial symptom in her case was pain in the right shoulder, which was followed in five months with pain in the right hand. Before the year was passed the right hand was tremulous in a characteristic fashion. Some time after that she complained of pain in the left shoulder, and later in the left hand. Then this extremity became tremulous. Thus the pain and tremor extended to involve the four extremities. Another woman said that she had had pain in the right thumb almost steadily for three years without any other symptom save a variable amount of acroparæsthesia. At the end of this time tremor began in the index finger and thumb of the right hand, the movements being of the "pill-rolling" character. Another woman says that the initial symptom was inability to move around as agilely as formerly, especially in the morning. After this condition had lasted for a year or more she remarked a tremor in the right hand. Another woman states that the early symptoms in her case were referable entirely to the stomach, a sensation of fullness and agitation in the stomach, associated with flushings of the face and attacks of unaccountable perspiration. Two of the male patients stated that both hands began to shake simultaneously, and that this agitation was the initial symptom. In all the other cases the tremor was unilateral in its onset.

Recently,* Dr. Purves Stewart has described what he believes to be a new and early symptom in paralysis agitans. It consists in a peculiar affection of the toes, which causes them to become spontaneously strongly flexed and curled up under the sole in a cramplike fashion when the patient is walking. We have made careful inquiry and examination in ten of our twenty-four patients now under observation, and have found nothing approximating this, save perhaps in one case. In our experience it is neither an early symptom nor a symptom at all, except as cramps in various parts of the body are of occasional occurrence. Two of our patients complained of cramp in the foot, which, however, was as liable to occur while the patient was lying down as when moving about. Three patients suffered considerably from cramps in the legs. Considering, therefore, that involuntary, painful contractions of various muscles were noted in upward of twenty-five per cent. of the cases, it would seem more legitimate to call this a "new symptom in paralysis agitans" than "curling" of the toes.

Our statistics show that the type of the disease was preponderingly diplegic, which, it may be said in passing, is at variance with the statement of most writers, who say that the symptoms of the disease in most cases are hemiplegic in distribution. Thirteen of the cases were diplegic, three hemiplegic, and two tetraplegic. In three of the remaining cases

* *Lancet*, November 12, 1898.

the symptoms were more pronounced on the left side than on the right. This, however, does not place them in the hemiplegic category. Only two of the cases were of the monoplegic type. In one case the lower jaw was distinctly affected. Of the twenty-four cases one only was devoid of tremor. This was a most typical case of Parkinson's disease in a laborer sixty-one years of age. At the present writing his disease has lasted upward of five years, and there is no evidence of tremor. No general statement can be made concerning the earliest symptom in every case of paralysis agitans. As we have pointed out, this is variable with each case. Although tremulousness is the symptom for which the patient first seeks relief, careful inquiry will usually show that rigidity, amyosthenia, and diminished agility have antedated the tremor for a longer or shorter time.

Study of our cases relative to the nature and the rhythm of the tremor goes to corroborate the customary teaching. The rate was in all cases from three to six per second. The amplitude of the tremor increased with the progress of the disease. In three cases the tremor was distinctly intentional—that is, it was increased by purposeful movements. In some advanced stages it was noted that voluntary action had decidedly a quieting influence upon the tremor. In nearly every case the tremor was increased by excitement, reproof, mental agitation, etc. In two cases only was it noted that physical agitation had a soothing influence upon the tremor. Many German writers state that the head very rarely participates in the tremor, while Charcot taught that this was the exception, not the rule. This was inquired into in all of our cases, and in five there was distinct tremor of the cephalic extremity.

As to the influence of sleep, in nine cases of which definite information could be obtained, the tremor always stopped during sleep. One man was very positive that toward morning he was awakened by a spontaneous fit of shaking.

In eleven cases the state of muscular tonicity was measured with Dr. Musken's tonometer, some of them repeatedly. Without entering into details of this method here, it can be stated that in three cases of the hemiplegic type in which there was no tremor nor stiffness of the opposite leg, the tonometer showed a distinct increase of tonicity. In fact, in only two cases was there found normal tonicity of the legs. It may therefore be concluded that increased tonicity is a very early symptom, and probably always precedes the tremor and rigidity.

The respiration was studied in eleven cases. In four cases it was regular and deep, without particular change. In four cases it was superficial and of increased frequency, twenty-one to twenty-four a minute. Ih three of these last cases the expiration was irregular and jerky, while the inspiration was regular and harmonious. In one case it was distinctly noted that the jerkiness of the expiration coincided with the tremulous movement of the arm, but in the other two cases this was not so.

In fifteen cases special inquiry was made concerning the existence of propulsion, retropulsion, and lateropulsion. In seven case all knowledge of its existence was absolutely denied. In five of the remaining eight cases the patients complained of a tendency to fall forward. In four patients there was at the same time some retropulsion and lateropulsion. In two patients of the hemiplegic type lateropulsion was present, the tendency being to fall toward the diseased side.

In sixteen cases inquiry was made concerning the state of the stomach and bowels. Eight patients complained of obstinate constipation, one patient had chronic diarrhœa, another had occasional attacks of diarrhœa, while the remaining seven made no complaint of their gastro-intestinal functions.

Abnormal heat sensations were complained of in five cases out of fifteen, in which it was noted that inquiry had been made in regard to this condition. The hot flashes were usually of the face, but not infrequently also manifest in the side showing the tremor. In four cases perspiration was a very disagreeable symptom. As a rule, it occurred rather late in the disease. In one instance alone was it an initial symptom. Drooling was a very distressing symptom in two cases.

The mental condition of the patients were noted in nineteen cases. Eleven were cheerful, hopeful, and of good disposition, and easy to get along with. This, taken in connection with the fact that some of them were inmates of a charity hospital whose invironment is not particularly contributable to the mildest degree of euphoria, means a great deal. In none of our patients was there any perceptible degree of dementia Four of the patients were at times considerably depressed; but of these, one was trying to carry on a business, and another was subject to considerable harassment in a law court.

TREATMENT.—Unfortunately, no medicament has yet been discovered that has any influence in shaping the course or changing the outcome of this disease. Beginners in the art of therapy should keep this in mind, and thus spare themselves the trouble of attempting a cure by any of the drugs—and their name is legion—that have been recommended during the last half century. Energy of this kind and zeal for experimentation may be legitimately expended, perhaps, in trials with new drugs and other health-restoring measures. But it should not be forgotten that one is not always justified in elevating the hopes of the patient for recovery so high or so often that when the promises are not fulfilled their confidence is so completely shattered that only harm results. Despite this depressing estimate of the value of drug medication in the treatment of paralysis agitans, much can be done to alleviate the symptoms, to prolong the patient's life, and to make him more comfortable. As in all other nervous diseases, the dietetic and disciplinary treatment are of the greatest importance. Their value is very conspicuously seen in patients who early in the course of the disease are obliged to seek the shelter of a hospital. Although they are apparently and really not very ill, as wage earners they are incapacitated. The regular mode of life, and all that is

implied by hospitalization, is conducive to avoidance of wear and tear, and such patients continue year after year without any material change except slight increase of rigidity, tremor, and other cardinal symptoms. The first indication, then, is for the arrangement of an uneventful life, free from care, strife excitement, and sordidity, in a congenial environment and healthful climate. As a rule, a cool climate is for more grateful than a hot one. Residence in the country or in the suburbs, where a maximum of fresh air, sunlight, and sleep are to be had, with a minimum of demand on the mind and the body, meets the requirements, providing the vital force of the patient is not put to a severe test in withstanding extremes of temperature.

The diet should be of a simple, nourishing, strengthening kind, and close attention must be given to the functions of digestion and of absorption, so that the bodily weight may be kept at the level which was normal in health. The comfort of the patient can be materially added to by regulation of the bowels and other eliminative avenues. It is absolutely necessary that the patient has the personal care of an attendant or one of the family. Disastrous accidents have not infrequently followed neglect of this precaution. The customary measures for the maintenance of general muscular tone and nutrition, so serviceable in many functional and organic nervous diseases, such as the application of water and electricity. the use of massage and gymnastics, are not so appropriate in this disease as they are in many others. Nevertheless, the use of lukewarm baths, of from twenty-minutes to half an hour's duration, are oftentimes very soothing to the patient, and have a tendency to make the muscular rigidity less dominant. Moreover, they contribute to a moderate feeling of well-being, and assist toward the realization of refreshing rest for which the patient generally clamors In patients under forty years of age, the application of water from 90° to 75° F. from the hand of an attendant, followed and accompanied by friction, is sometimes serviceable in combating the distressing attacks of local and general heat of which the patient complains. This measure can be utilized daily with patients who react well after it. Reaction may be facilitated by having the patient wrapped in a hot blanket previous to the ablution, by having him stand in hot water during the bath, and by light massage and external heat following it. Massage, applied as stroking and light kneading, fulfills practically the same purpose and is utilized for the same ends. Papotement or percussion should be avoided. It tends to lessen the spasticity, to improve the general nutrition, and to increase the patient's capacity for rest. Swedish gymnastics have been warmly recommended by some writers, but we have never seen anything but detriment attend its use. The same may be said of suspension, which has been plentifully tried, and of nerve stretching. They are mentioned only to be advised against. A few years ago Charcot promulgated the fact that many of his patients with paralysis agitans were more comfortable after a short ride in a jolting vehicle. Assuming that the jarring and vibrations had a soothing effect on the nerve centres from which arise the tremor and

rigidity, this clinician had a chair so constructed that the patient or an attendant could, by pushing a pair of upright handles backward and forward, communicate vibration to the entire body. Such a chair was in use for many months in my clinic, but nowadays it subserves only a single purpose, a seat. Its uselessness is no greater than that of other vibratory apparatuses, such as the one for the head, that have been constructed with a similar end in view. Electricity has practically no place in the therapeutics of paralysis agitans, excepting so far as it is a potent agency for suggestion. One of the most striking results of treatment in paralysis agitans is the temporary amelioration of all the symptoms on undertaking any new form of treatment. We have now under observation a man in the advanced stage of the disease who some years ago maintained that he was materially improved by some mechanical treatment given to him by another physician. On inquiry, it was found that the "treatment" consisted in taking a few tracings of the tremor. Oppenheim states that he has seen considerable benefit follow thee lectric bath, and especially the application of the dipolar faradaic current, but it is not improbable that the bath alone would have been accompanied by quite as much improvement.

The drugs that are in use for paralysis agitans, and from which some benent in dissipating symptoms and fulfilling pointed indications may be expected, are hyoscyamus and duboisine, Indian hemp, opium, hæmatogenous agencies, such as arsenic and iron, and occasionally gelsemium and veratrum viride. Of these, the most important by far are the two first mentioned. Given hypodermically, which is the preferable way when possible, or by the mouth, they promptly mitigate the severity of the tremor, and have a pronounced tendency to relax the muscular rigidity. They are both powerful toxic agencies, and must therefore be given with care. Hyoscaymus (hyoscine hydrobromide, one one hundred and twentieth to one eightieth of a grain) is said to have more advocates than duboisine, but, personally, we much prefer the latter. In administration it is not so apt to be attended by disagreeable symptoms, while the effects are coequal. The sulphate of duboisine should be given in from one one hundredth to one sixtieth of a grain, two or three times daily. On the accession of vertigo, cephalic paræsthesia, disturbances of vision, nausea, dryness of the mouth and tongue, it should be stopped at once. In many instances the administration of either of these drugs is followed by almost complete cessation of the tremor for a shorter or longer time, but usually for several days. Unfortunately, thay apparently have slight effect in mitigating sleeplessness, amyosthenia, and the feeling of unrepose that so many patients complain of. When these become too burdensome for the patient to bear unaided, opium or its alkaloids, preferably morphine, must be given, and especially to cause rest and sleep in advanced cases. Earlier in the disease reliance can be placed on the less baneful sleep producers, such as sulphonal, trional, paraldehyde, etc., given in the same way as they are for idiopathic insomnia. The salts of salicylic acid, particularly those of sodium and potassium, have been widely recommended,

especially during the last ten years, probably suggested by the patient's complaint of rheumatic pains and by the occurrence of other more characteristic phenomena of rheumatism. After thorough trials, we are convinced that such medication is quite useless. Considering the profound degree of depression in neuromusclar tone which patients with this disease have, it seems incredible that the bromides have ever been recommended or given, but, unfortunately, they have been. They are powerful agencies for harm, and the thought of their administration should never be harbored. In some instances, especially in those cases that are not benefited temporarily by duboisine or hyoscyamus, same mitigation of the tremor and rigidity may be obtained by the administration of gelsemium or veratrum viride in from three to five-drachm doses, three times a day. These drugs have served us more satisfactorily as symptom medicines than Indian hemp, which has the recommendation of Gowers, and which has been widely used.—*New York Medical Journal.*

A NEW METHOD OF ANÆSTHESIA.

The manifest disadvantages of ether and chloroform at times, and the marked limitations to the use of local anæsthetics, have caused no end of anxiety to the surgeon when confronted by unusual conditions. That a way of relief has been ingeniously contrived would seem to be found in the device recently advocated by Bier, of Kiel, in the *Deutsche Zeitschrift für Chirurgie*, April, 1899. He adopts Quincke's method of lumbar puncture after preliminary local anæsthesia by Schleich's infiltration, and injects into the sac of the spinal cord small quantities of a dilute solution of cocaine, using from one-tenth to one-sixth of a grain. This seems to influence the spinal ganglia and the root zones and the medullated fibres before they emerge from the cord, and produces a complete analgesia below the line of injection, which comes on from eight to ten minutes after the injection. By using this method he has been enabled to do major operations without pain, and yet the patient does not lose the sensations of touch and of temperature Osteoplastic operations on the knee and ankle and hip joint, resection of the femur, necrotomy of the tibia and resection for osteomyelitis of the femur were performed without pain and with entirely satisfactory results. The author has experimented upon himself and a colleague, and reports that thus far the only untoward results obtained have been those due to a loss of the cerebrospinal fluid. This happened in his own case by self-experimentation, and he was confined to bed for some days, suffering from dizziness, headache, nausea and vomiting when he attempted to assume the upright posture. Since the experiments along the line of lumbar puncture have been so numerous it is by no means improbable that a method can be devised to overcome this disadvantage, and the device after further experimentation and perfecting will undoubtedly open up new fields in surgery.—*Medical Record.*

GASTRITIS CHRONIC.

DIAGNOSIS.—C. D. Aaron states that chronic catarrh of the stomach cannot be diagnosed from the symptoms given by the patient. The only positive means of diagnosis is the examination of the stomach-contents after a test-breakfast. The patient should eat as his first morning meal a dry roll and drink 12 ounces of water with it. Precisely one hour thereafter, this is removed and a chemical, microscopical, and physiological examination made of it If hydrochloric acid be present up to 40 degrees one must exclude catarrh. If absent, in 99 per cent. of cases there is a chronic catarrh; whether it be primary or secondary must be determined by an examination of the other organs of the patient.

Besides the search for free hydrochloric acid, it is of the greatest importance, diagnostically and prognostically, to show the presence of the ferments: pepsin and rennet. The residue of the test-breakfast is filtered and a reagent glass filled with 5 cubic centimetres of gastric juice and one drop of official hydrochloric acid. To this is added a thin disk of the white of a hard-boiled egg. In another reagent glass are placed 5 cubic centimetres of a 1-per-cent. solution of calcium chloride, and added to this three drops of gastric juice. Both reagent glasses are then placed in an incubator at 100° F. If the milk be coagulated in fifteen minutes and the disk dissolved in four to six hours, both ferments are present and atrophic catarrh of the stomach is to be excluded.

ETIOLOGY.—Etiologically the same author recognizes two forms of chronic catarrh: the primary and secondary. The primary, or true, chronic catarrh is caused by injury to the stomach directly, especially by excessive use of alcohol, tobacco, and laxatives; by insufficiently masticated food; by irregular mode of living, and by an obstinate acute catarrh. The secondary is to be found in engorgement of the systemic circulation or the portal system, and is usually due to chronic heart and pumonary diseases, cirrhosis of the liver, nephritis, infectious diseases, and occurs as an attending phenomenon in carcinoma of the stomach.

TREATMENT.—W. C. Bilbro remarks that each case should be especially individualized and studied and traced, as there are no two alike and no two require the same diet or medicine. There is absolutely no routine treatment successful. The successful treatment of chronic gastritis depends very much on the patient's resolution and perseverance in carrying out the instructions he receives. Mental influences are very important in the treatment. Arsenic in small doses long continued is one of the most potent drugs in any mucoid inflammation of the stomach and bowels. Nux vomica is indicated and should be given in doses of not less than 20 drops of the tincture, or from $\frac{1}{20}$ to $\frac{1}{16}$ grain of strychnine. Hydrochloric acid is almost always admissible and useful. Lavage is an important factor in the treatment. The object is to thoroughly clean the stomach, and nothing is better than papoid and water, the patient not being allowed to take nourishment for thirty minutes or an hour after

the washing. Diet must be strictly regulated; all irritating or indigestible food must be strictly prohibited, and only that which is most easily digested and assimilated allowed. Milk does not agree with every person, especially sweet milk, but when it can be taken alone or diluted with one-fourth lime-water, given in small quantities and at frequent intervals in extreme cases, it will be found very valuable. Tea and coffee, as a rule, should be avoided; alcoholic stimulants should not be allowed unless in cases of habitual drinkers, then a little good whisky in Vichy water is possibly admissible. Regularity in the times of administration and in the quantity of nourishment given is most essential.

Eugene R. Morris says the first thing in treatment is to carefully regulate the quantity and character of food, which should be taken regularly, and should be thoroughly masticated, starchy, fatty, saccharin, and all highly-seasoned foods and stimulants being avoided. Fresh air and exercise short of exposure and fatigue are essential. Cold sponge-baths, followed by brisk rubbing, improve the peripheral circulation and increase the tonicity of the skin. Pleasant surroundings and a change of climate and associations are beneficial where the tendency is to mental despondency. Hydrochloric acid is the most important and the most generally deficient ingredient of the gastric juice. It is not only necessary for its action as an acid, but is essential to the conversion of pepsinogen into pepsin. Ewald recommends large doses of the dilute acid—90 drops—after meals, while Leube and Reigel advise small doses, 10 to 20 drops. Probably the best results are obtained from the judicious use of hydrochloric acid in the atrophic and neurotic forms, while the bitter tonics act most effectually in other cases of chronic gastritis. Of the bitter tonics, strychnia, in some form, will prove the most satisfactory. Alcohol and sodium chloride prove good stomachics when properly used. Stomach lavage should be used more extensively. Lukewarm water may be used, but, if there is much thick mucus, a 1-per cent. salt solution, or 3-per cent. solution of bicarbonate of soda is preferable. With fermentation a 3 per cent. boric acid solution is to be used. Lavage should be performed, if possible, in the morning on an empty stomach, except when there is a nocturnal disturbance with flatulency, when it should be practiced three or four hours after the last meal. Lavage may be repeated once a day, unless the patient be delicate, when every second or third day will be often enough. It should be continued until the fluid returns clear. If the patient will not submit to lavage, the next best thing is to order one-half to one pint of *hot water* to be taken slowly one hour *before* meals.

S. W. Battle believes that hydrastis is one of the best remedies for catarrhs of the mucous membranes and for that of the alimentary tract especially. Fluid extract of hydrastis given before meals in doses ½ to 1 teaspoonful has given excellent results. Peroxide of hydrogen has also been found useful. A teaspoonful of peroxide of hydrogen and hydrastis may be given a half hour before breakfast in warm water.

PLEURISY.

SYMPTOMS.—Maurice Lemoine states that very often pleurisy with a large amount of effusion may be completely latent in an old person. Four varieties may be described: The first occurs in subjects who are apparently healthy. There may be merely some malaise, headache, and sleeplessness. Pyrexia may be completely absent or only very slight. There is very little, if any, dyspnœa, and there may be merely slight pain in one side of the chest. The existence of effusion becomes evident by examination.

The second form occurs in persons of somewhat impaired health. Respiration is accompanied by some difficulty, and there may be nocturnal dyspnœa and breathlessness on exertion. Perimalleolar œdema is sometimes noticed. A sudden attack of cardiac failure follows these symptoms.

The third form is more marked; there is dilatation, anasarca, Cheyne-Stakes respiration, and intense dyspnœa. Pleural effusion is a late symptom.

In the fourth variety the cause of pleurisy is pulmonary infarction, and the symptoms in this condition may be observed previous to the appearance of the pleurisy, which only occurs toward the end of the second week.

Tuberculosis and pneumonic pleurisy may also be found among elderly patients, but do not differ in their symptomatology from cases occurring earlier in life. Sudden death in the course of a pleurisy is very rare among old people.

G. Zuelzer states that, according to Bouveret, the general symptoms of diaphragmatic pleurisy are like those of pleurisy elsewhere, but physical signs are absent. The pain is more severe and more widely distributed than in ordinary pleurisy. Palpation discovers tender points around the thorax at the level of the insertion of the diaphragm; at the base of the neck, where the phrenic nerve passes along the scalene muscles; and at a spot which represents the point of intersection of two lines, one running vertically, parallel with the outer sternal border, the other, a horizontal one, being an imaginary prolonged tenth rib. Other peculiarities of this variety of pleurisy are: 1. The pain is abnormally violent and diffuse. 2. Movement is almost suppressed in the hypochondrium and base of the thorax on the affected side. 3. Physical signs may be absent, or consist in a limited tympanitic resonance at the extreme base, and minus breath-sounds. 4. Occasionally there is pain on swallowing as the food passes the diaphragm. 5. Hiccough may be present. These effusions, when near the centre of the diaphragm, are out of reach of the exploring syringe.

TREATMENT.—Lop and Monteux from a study of various reports of staphylococcic pleurisy, find that the condition is of extremely low, irregular, and prolonged cause. The fluid is often serous in the early stages, subsequently becoming purulent; but it does not contain flakes

of fibrin. Suppuration is usually free. The staphylococcus is not very specific and only tends to develop in those who are already in bad health or who are convalescing from some serious illness. The diagnosis from tuberculosis is often difficult.

ETIOLOGY.—Lauder Brunton remarks that one of the first causes of pleurisy may be injury to the side, a blow, etc. In many other cases a chill gives rise to the pleurisy, and in some of those cases it is impossible to trace the presence of any other factor.

Leaving out cancer of the pleura, le Demany groups all sero-fibrinous pleurisies in three classes:—

1. Tuberculosis pleurisy of the type known as acute, primary, or *à frigore*.

2. Pleurisy from miliary tubercles of the pleura in the course of a general tuberculosis.

3. Pleurisy secondary to lesions of the lung; (*a*) by subpleural infarcts; (*b*) by subpleural hepatization; (*c*) by pulmonary congestions.

Pyogenic microbes, if they set up any pleurisy, can only cause a purulent pleurisy. Sero-fibrinous pleurisies and purulent pleurisies are the results of processes essentially different, and not merely two distinct degrees of the same process. All sero-fibrinous pleurisies being regarded as tubercular, it is preferable to leave the effusion until the pleural tuberculosis becomes healed. As tubercle develops less easily in a collapsed lung than in a normal lung, the effusion is protective to the lung. Paracentesis is harmful in sero-fibrinous pleurisies, except to aid absorption which has already commenced, in which case it is harmless, but unnecessary.

Achard notes two cases of pleuritis occuring in the course of typhoid fever in which the typhoid bacillus was obtained in pure culture from the aspirated fluid. The fluid was serous in one case, and sero-sanguinolent, becoming purulent later, in the other.

PATHOLOGY.—W. S. Lazarus-Barlow has found that there are at least three distinct forms of pleurisy: (1) a form in which "fibrinoid degeneration" occurs along with marked filtration of the pleura by cells; (2) a form in which there is a general increase of the connective tissue of the pleura without marked filtration by cells and without "fibrinoid degeneration" of the connective-tissue fibrils; (3) a form in which the whole thickness of the inflamed pleura consists of highly-vascular and very young cicatrical tissue. Endothelium may be found covering the "false membrane," and the connective tissue of the pleura itself may undergo the change termed "fibrinoid degeneration"; but these changes are not commonly seen. In the greater number of human cases examined all trace of the normal endothelium was lost.

TREATMENT.—J. M. Patton regards the treatment of fibrinous pleurisy as largely symptomatic. The most efficient remedy for the plan is $\frac{1}{4}$ grain of morphine hypodermically. In diaphragmatic pleurisy morphine

is generally a necessity. Next to morphine the quickest relief is afforded by a good-sized fly-blister. When these means are objectionable, especially in children, the hot poultice, mustard plaster, or hot applications are very useful. Blisters, while relieving pain, seem, also, to have some modifying action on the intensity of the inflammatory process, and their application is, therefore, good treatment in cases of active inflammation. A single blister 4 x 5 or 5 x 6 is better than several, or a succession of, small ones. Leeches are better than cupping for the relief of pain. Fixing the side by means of long strips of adhesive plaster passing over the median line and drawn tightly gives much relief. The fever and cough should be treated symptomatically. The bowels should be managed by a little calomel followed by a saline. Iron, quinine, and strychnine are very useful in overcoming the depression which follows the attack.

Jegorof says that salol in doses of 12 to 42 grammes is of great service in cases of pleurisy, increasing the diuresis and promoting the absorption of effusion without producing any of the ill effects previously observed from alkaline salicylates.

In eleven cases of serious pleurisy Prosorowski was enabled to cause the disappearance of the exudations by painting the skin with guaiacol. No unpleasant objective by-effects were noted. As a rule, from five to seven applications sufficed to bring about the disappearance of the exudation. In a few cases a fall of 0.36° to 3.6° F. in temperature was observed after the application of the guaiacol, but a rise to the original or even a higher temperature soon followed.

Talamon thinks that a serious pleurisy which has not been tapped is recovered from better and more completely than one which is tapped. Even at the end of two months or more after paracentesis, sometimes dullness, diminished vocal resonance, and feeble respiration persist. Most of the cases of serious pleurisy are tubercular, and it is thought that paracentesis withdraws from the organism a fluid which is its principal defence against the invasion of the bacillus. It favors the absorption of the residue of this liquid, and together with this the germs which it contains. In this way it hastens the tuberculization of the lung.—*Monthly Cyclopedia.*

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The Canada Lancet

A Monthly Journal of Medical and Surgical Science, Criticism and News.

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The Largest Circulation of any Medical Journal in the Dominion.

CANADIAN MEDICAL ASSOCIATION.

The thirty-second annual meeting of the Canadian Medical Association will be held at Toronto on Wednesday, Thursday and Friday, August 30th, 31st and September 1st, 1899.

Through the kindness of the Honorable Minister of Education for Ontario, the building of the Education Department has been placed at the disposal of the Association, and in it the meeting will be held. This building is most centrally situated, as the Church street cars pass the building, and the Yonge street line is but one block away.

The programme will be of exceptional interest, and the very important subject of Inter-Provincial Registration will receive full discussion at this meeting.

A number of entertainments have been provided for, including a Reception and Musicale for members and their friends on the first evening; a Lunch at Exhibition Park; an Afternoon Tea at the Royal Canadian Yacht Club on the Island; a Smoking Concert, and other entertainments.

There will be an exhibition of instruments, drugs and physicians' supplies in connection with the meeting.

The Committee of Arrangements is making every possible effort to insure a successful meeting, and trusts that there will be a very large attendance. As the meeting is held during the first week of the Industrial Exposition, railway tickets to Toronto and return may be obtained for a single fare. We earnestly urge upon the members of the profession, to a man, to turn out to this meeting and make the thirty-second annual gathering by a long way the biggest on record.

PROGRAMME.

The President's Address will be delivered on the afternoon or evening of the first day by Irving H. Cameron.

The address in Surgery will be given by W. B. Coley, of New York

In the Skin Clinic, G. Chambers and A. McPhedran, of Toronto, and A. R. Robinson, of New York, and others will take part.

The following is a partial list of the papers to be read :

"The best method of dealing with the consumptive poor." E. J. Barrick, Toronto.

"Floating kidney simulating disease of the ovaries and tubes." A. Lapthorn Smith, Montreal.

"Observations on adenoids and enlarged tonsils and their removal, with notes of eighty cases in private and hospital practice." D. J. Gibb Wishart, Toronto.

"The methods and ultimate results of operations for valgus." N. A. Halux Powell, Toronto.

"Report of a case of abdominal pregnancy." H. Meek, London.

"An experience in formaldehyde disinfection." F. Montizambert, Ottawa.

"An inquiry into the etiology of chronic Bright's disease." A. G. Nicholls, Montreal.

"Operations for extra-uterine gestation." H. H. Chown, Winnipeg.

"Tuberculosis in cattle and its prevention." J. George Adami, Montreal.

"The hospital room in each dwelling." W. J. Telfer, Montreal.

"The treatment of spina bifida." Geo. A. Bingham, Toronto.

"Complications and treatment of fractures of the skull." J. M. Elder, Montreal.

"Recurrent paralysis of the third nerve (Charcot's ophthalmoplegic migraine)." J. W. Sterling, Montreal.

"Tuberculosis and insurance." J. Hunter, Toronto.

"(*a*) Typhoid infection without intestinal lesion : (*b*) Gastroptosis." A. McPhedran, Toronto.

"Some observations on the treatment of cancer." A. R. Robinson, New York.

"Gall-bladder surgery." J. F. W. Ross, Toronto.

"Typhoid epidemics I have met." Wyatt Johnston, Montreal.

"The treatment of cataract." R. A. Reeve, Toronto.

"Christian Science." J. H. Richardson, Toronto.

"Anesthesia by chloroform and ether." Wm. B. Jones, Rochester.

"Treatment of the acute digestive disorders of infancy." A. R. Gordon, Toronto.

"Rhinoliths." Hubert D. Hamilton, Montreal.

"Observations on the relations of the thyroid gland to the uterus." C. R. Dickson, Toronto.

"The question of operation on thyroid tumors." Geo. A. Peters, Toronto.

"A case of malignant disease of the gall-bladder, simulating hydronephrosis (feeding through the gall-bladder for three days)." F. N. G. Starr, Toronto.

"An original method for the direct estimation of proteid digestion in the stomach." A. L. Benedict, Buffalo.

"Nephro lithotomy." B. L. Riordan, Toronto.

"The mastoid operation in chronic middle ear disease." J. M. McCallum, Toronto.

"Ringworm in Toronto." Graham Chambers, Toronto.

"The Great Lakes as a health resort." E. H. Adams, Toronto.

"A case of subcutaneous emphysema." Frederick Fenton, Toronto.

Papers have also been promised by G. H. Burnham, Toronto, A. B. MacCallum and J. J. Mackenzie, of Toronto, and a number of others.

During the meeting, T. G. Roddick, of Montreal, will address the Association on the subject of "Dominion Registration."

The Pathological Museum, in charge of a committee with A. Primrose as chairman, will add much to the interest of the meeting. A great many specimens have been promised, among which are the following:

Lower half of rectum removed for cancer. A. L. Smith, Montreal.

Ectopic pregnancy. H. Meek, London.

Extra-uterine gestation, and others. H. H Chown, Winnipeg.

Rarer forms of aneurism. Hearts. Calculi. Disease and fractures of bone, and others. J. Geo. Adami, Montreal.

Cast of hand from a case of acromegaly. J. M. McCallum, Toronto.

Congenital atresia of small intestine. W. B. Jones, Rochester.

Eustrongylus gigas in kidney of mink. Formaldehyde preparations. Dry anatomical preparations. F. N. G. Starr, Toronto.

Obstruction of colon by large gall-stone. Superfœtation. abortion at 4th month, 2 sacs 4 months and 6 weeks. Elevated fracture of skull. Heart and aorta. Fusiform dilatation of latter due to syphilitic endarteritis. Carcinoma of prostate with terminal suppurative cystitis. Columnar-celled carcinoma of stomach. Diffuse infiltration from cardiac to pyloric orifices. Solid ovarian tumor (Filseo Myo-Sarcoma) twelve pounds, etc. W. T. Connell, Kingston.

Lung—Chronic tuberculosis, Acute miliary, Tubercular broncho-pneumonia, etc. *Female Generative Organs*—Adhesions of pelvic organs, Pyosalpinx, Cysts, Tumors, etc. *Bladder Urinary*—Prostatic changes, Sacculation, Calculi, etc. *Bladder Biliary*—Hydrops, Calculi, etc. *Kidney*—Cirrhotic changes, Cysts, Tumors, Hydronephrosis and Pyonephrosis, Calculi, Tuberculosis, Anomalies and faults. (*Esophagus*—Stricture, New growths. *Stomach*—Ulcer simple, Carcinoma. *Intestine*—Adeno-carcinoma, Colitis, Enteritis chronic, Typhoid changes, Tubercular ulcerations. *Appendices: Heart*—Anomalies and developmental faults, Pericarditis, Myocarditis, Myomalachia cordis, Endocarditis. Chronic valvular disease, New growths, Dilation and hypertrophy without valve lesion. *Blood Vessels*—Atheroma, Aneurisms, Ectases, Varicose veins. *Liver*—Abscess, Cirrhotic changes, Venous congestion, Amyloid, Syphilis, New Growths. W. Goldie, Toronto.

For further particulars address F. N. G. Starr, Biological Department, Toronto.

It has been found impossible to send a circular concerning the Canadian Medical Association to every practitioner in the Dominion, as the lists of addresses are imperfect. It is particularly requested that any reader of this journal who has not received a circular, and who takes any interest whatever in the advancement of professional and scientific progress, will send a card to the General Secretary, Dr. F. N. G. Starr, 471 College Street, Toronto, from whom he will receive all information.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

The ninth annual meeting of the American Electro-therapeutic Association will be held in Washington, D.C., on September 19th, 20th and 21st, 1899, under the presidency of Dr. F. B. Bishop, of Washington.

Quite a number of papers of great scientific value have been promised, and the Committee of Arrangements insures the members a very entertaining and pleasurable meeting. Aside from the sessions of the Association, the Committee has completed arrangements for a trip to Mt. Vernon, one to Arlington, and several other social features.

The headquarters of the Association will be at Willard's Hotel, where special rates will be given to members and their families during the meeting.

PERSONAL.

Dr. Davison, of Charles street, is spending a month on Georgian Bay fishing, etc.

Dr. Ernest Hall, late of Victoria, B.C., has located in Toronto at 602 Spadina avenue.

Upon Dr. W. B. Geikie's return from holidays, it is his intention to retire from active practice, and confine himself to consultation work and that of teaching. The long career both as a teacher and general practitioner, admirably fits him for the position of consultant and he no doubt will receive the hearty support of the Profession both in city and surrounding country.

THE USES OF REMEDIES IN DISEASES OF THE HEART AND BLOOD-VESSELS.

It is obvious that the scope of my paper is so large that if I were to deal with it fully I would require to write a text-book, so that I can not do more in the time at my disposal than simply enter upon a few of the most important points. I have, therefore, thought it advisable, instead of entering into the details which are usually to be found in ordinary handbooks on the practice of medicine or in special books on cardiac disease, to take up a few points which I regard as the most important and try, if possible, to bring out clearly the general principles of treatment in diseases of the heart and vessels.

It is curious to think that the heart which is beating in the bosom of everyone began to beat a considerable while before the body had assumed a human shape, and will, with very few exceptions, continue to beat a short time after the individual has forever become unconscious of this world and all its concerns. During the whole life of the individual his health, energy and activity, his success in life, his physical force, his mental power and even his moral qualities, all depend to a great extent on the way his heart performs its duty. Hardly less important than the action of the heart is the function of the vessels, because, even while the heart is beating regularly and steadily, obstruction to some of the cerebral vessels may transform a man who was far above his fellows in physical strength or intellectual power into a helpless paralytic or demented invalid. A study of the means by which the functional activity of the heart and vessels can be maintained or increased is, therefore, of the utmost practical importance. This has been recognized in every age of medicine, and perhaps there is no movement more characteristic of the physician than that of feeling of the pulse of the patient. By this simple act the trained finger can discover a great deal regarding the state of both the heart and the vessels, and gain much information regarding the indications for treatment. Greater perfection in other means of physical diagnosis, and especially in ausculation, have tended to draw attention away from the pulse and direct it rather to the sounds which can be heard in the heart and vessels, so that more thought is now bestowed by many physicians upon actual valvular changes than upon the strength of the cardiac muscle. A little consideration will show that this is wrong. Many men live with serious organic disease for many years and are hardly conscious of it. When I was a medical student, one of my honored teachers had had pericarditis and suffered from great shortness of breath due to adherent pericardium. After a lapse of thirty-five years, during which he has continued to do much good work, he seems now to be much stronger and healthier than he was then. A similar occurrence takes place when the valves are diseased. In his excellent work on diseases of the heart, Sansom says that many who are the subjects of even considerable valvular affections can live a large portion of their lives unconscious that they have any such disease. Balfour states that he has seen many

cases of aortic incompetency who have suffered from it from thirty-five to forty years, and an old friend of his had suffered from mitral regurgitation for nearly seventy years, yet lived a useful life nearly all that time, and even at the last, his heart was not the first organ to fail. A medical man whom I used to see had been rejected for life assurance on account of mitral disease, before the Crimean War, and had been told that he had not two years to live. He thought that as his time was short, he might as well see something of the world during it, so he entered the army, served through the Crimean War, saw a great deal of active service afterward, and died only about two or three years ago. These instances clearly show that considerable valvular disease may have little effect in shortening life or producing serious symptoms. But the case is very different when we come to consider the muscular walls of the heart, for any weakness in them not only enfeebles the circulation at once, but will secondarily produce valvular incompetence The mitral and tricuspid valves are only large enough to close orifices of a certain diameter, and when these orifices become larger, as they do from enfeeblement of the cardiac muscle, the valves are not able to close the auricular and ventricular openings, and regurgitation takes place.

Weakness of the heart is not an absolute, but only a relative term, and however strong the heart itself may be, the limit of its power may be reached. The ancient Greeks who carried the news of the battle of Marathon to Athens must have had a very powerful and healthy heart in order to do so, but even he overstrained it and fell dead at the conclusion of his task. The young American who performed a similar feat a few years ago showed himself either stronger or more fortunate than the hero of old, yet he must have felt the unpleasant symptoms of cardiac strain. These symptoms are known to almost every one, because in ordinary people who are out of training a short run to catch a railway train or streamer, more especially if a portmanteau or bag be carried, will bring on tightness and oppression across the chest, rapid, difficult and gasping breathing, giddiness and muscular weakness, so that the person may be unable to stand. In feeble or elderly men these symptoms may be associated with a sense of impending death, and death indeed may actually occur. In such cases we find that moderate exertion in persons who are healthy but otherwise out of training, produces symptoms similar to those which occur in men of exceptional health and training, like that of the athletes of Athens, after severe strain. But when the heart is feeble and fatty from imperfect nutrition, such as occurs from the chronic abuse of alcohol, or from atheromatous change in the coronary arteries, and especially when the heart thus degenerated has extra work thrown upon it by valvular disease, we find that slight movements, such as that of crossing the room, of getting up, or even of sitting up in bed, may bring on symptoms of cardiac distress similar to those which occur after a run to the train in middle-aged gentlemen, or after a run of many miles in athletes. What I have just said is, I think sufficient to prove the statement with which I started, namely, that cardiac weakness is a relative term, and expresses the power of the heart, not absolutely, but only in

relation to the work that it is called upon to perform. Probably there is not one in a hundred thousand; perhaps indeed not one in several millions of men, however young, strong or athletic, who could at a moment's notice start on a race such as that from Marathon to Athens and run it successfully. In order to do so previous training is necessary, and the science of such training is to accustom the heart to excessive exertion by gradually increasing the work which it has to do, while at the same time the other organs of the body are kept in a healthy condition, so that the heart may receive a proper supply of healthy blood and its nutrition be thereby increased. The best example of training is the classic one of Milo, the wrestler of Croton, who is said to have succeeded in carrying a full-grown bull upon his shoulders by beginning to carry it when it was a new-born calf and continuing to carry it every day afterward. In this, way, it is said, the athlete's strength gradually increased in proportion to the weight of the calf. If training, then, be the method of bringing an ordinary healthy heart up to the mark required for excessive physical exertion, the same method ought to be successful in bringing the heart enfeebled by disease up to the healthy standard.

This, I believe, is the truth, and of all agents for remedying cardiac weakness there is none so good as that of training. The training must be adapted to the condition of the heart, and the amount of exercise given to a feeble, fatty heart must be very little indeed, and when even slight movements give rise to cardiac distress, we must insist upon absolute rest. It is sometimes difficult to get this injunction carried out, for active people insist upon getting up and moving about the room, even when such movements cause distress. But here the physician must insist that absolute rest in bed shall be maintained and that the whole strength of the patient shall be devoted to the recuperation of his heart. One good rule is that the heart shall not be allowed to make a single extra beat that can be avoided. If the patient rises in bed his heart will probably beat from five to ten times in a minute more than if he lay quiet, and if it does this for five minutes it has done from twenty-five to sixty beats too much. Sometimes patients will grumble, but they may occasionally be comforted by simply reminding them that their condition is not nearly so bad as if they had broken their thigh-bone, for then they would have been put up with a splint, unable to move for many weeks, and very likely have been suffering pain, while their cardiac disease is producing them no pain whatever. Indeed, I have sometimes threatened patients to put them up in a long splint, as if they had a broken leg, when I find them rebelling against the enforced rest which is necessary for their recovery. I do not think I can speak too strongly regarding the necessity for absolute rest in bed in cases of cardiac distress. I often remind patients that they must treat a strained heart as they would a sprained ankle, and remember that just as the least extra movement will bring on a pain in the ankle, so it will increase the distress in the heart, while each increase still further prolongs the time necessary for recovery.

But here another difficulty meets us. By keeping the patient so quiet we no doubt lessen the work the heart has to do, but we diminish at the

same time the circulation through the stomach, liver, intestines, kidneys and musles, and we thus tend to a certain extent to interfere with the elaboration of healthy blood which is required for the efficient nourishment of the heart. Here massage comes in, and when this is skilfully applied, it not only increases the circulation through the various organs of the body, but while doing so it gives the heart rather less than more to do. For when the patient is left to himself the heart has to drive the blood onward through the whole circulation, but when the masseur is at work he moves the venous blood along the veins, the lymph along the lymph spaces and lympathics, so that his hand is really a kind of accessory venous and lymphatic heart. At the same time it actually lessens the work to be done in the muscular arteries, for Dr. Tunnicliffe and I found that massage of the muscles causes the blood to flow through them much more quickly than when they are at rest. We see, then, that in the worst cases of cardiac distress the chief remedies are absolute rest and massage. But there is a long interval between this condition and that of ordinary health, which must be filled up by gradually increasing movements. These movements have of late years received a great deal of attention, more especially from Ling in Sweden, Schott of Nauheim, and others. The essence of these movements is that they must be slow, gentle, and gradually increased against resistance, that they shall not cause the patient any distress, but only call upon the heart for such work day by day as it is well able to do. But before the patient has reached this stage where he is able to take ordinary exercise, another system of treatment, namely baths, may be employed to assist the action of the exercises. In the treatment which is so successfully employed at Nauheim the baths contain chlorid of sodium and calcium, the proportions being 10 per 1000 of chlorids of sodium at the commencement, gradually raised to 30, and of chlorid of calcium 2 per 1000, gradually raised to 3 or even 5 per 1000. At Nauheim the waters contain carbonic acid, but this may be artifically supplied by means of bicarbonate of sodium and hydrochloric acid, or tablets specially prepared for this purpose.

The effect of these baths is to stimulate the skin and increase the flow of blood through it, while at the same time a reflex influence is exerted upon the heart through the vagus, by which the pulse is slowed. It is evident, by dilating the cutaneous vessels, the effect of the bath upon the skin is somewhat similar to that of the masseur upon the muscles; that is, in both cases the bed through which the blood has to flow becomes wider, and the resistance to the action of the heart is consequently diminished. Where the tension is great it may be still further diminished by the use of nitrites or substances having a similar reaction. But the most important effect of the baths is probably a reflex one upon the heart, and perhaps I may make this effect more clear by a comparison with athletic feats. To walk a thousand miles in six weeks can hardly be regarded as any feat at all, but to walk a thousand miles in a thousand hours is a very different thing indeed, and may be regarded even now as beyond the capacity of most men. There is no

more actual work involved in walking twenty-four miles in one day than in walking twenty-four miles in twenty-four successive hours, one mile every hour. The difference between the two is the shortness of time allowed for rest and recovery between each period of exertion in the latter. When this time is further shortened, as it is in walking a thousand half-miles in a thousand half-hours, the difficulty becomes incomparably greater. It would probably be almost impossible for any one to perform this feat by walking a mile at the beginning of each half-hour, but in order to increase the intervals for rest, one mile is done at the end of one-half hour and the next mile at the beginning of the next. Supposing that a man walks four miles an hour, or what is equivalent to it, one mile in a quarter of an hour, he would only have a quarter of an hour's rest between each successive mile if he walked it at the beginning of each half-hour. But by walking two miles together he is able to obtain half an hour's rest, and it is the prolongation of the rest which enables the man to go through with the feat. Now, the action of the heart is like that of the athlete who has very short periods of rest between his periods of action, and just as the athlete's work is rendered more difficult by shortening his periods of rest, so is that of the heart by increasing the rapidity of its pulsations. For just as the athlete will take about the same time to cover his mile whether he be walking twenty-four miles a day, one mile in each hour, or half a mile in each half-hour, so the heart takes about the same time to perform its systole whether it be acting quickly or slowly. Increased rapidity of the pulsations, therefore, means a shorter time for rest and consequent loss of time for recuperation. The inhibitory fibers of the vagus, which slow the heart, are the nerves which tend to increase its nutrition, and when they are cut through and the heart is allowed to beat more quickly, it is very apt before long to undergo degeneration. It is, therefore, evident that any means by which we can stimulate the vagus and slow the heart is likely to aid us in restoring its power. This is the effect which baths seem to have, and they probably act, reflexly on the vagus through the nerves of the skin.

But we have, in addition, various drugs which stimulate the vagus roots in the medulla oblongata or the terminal endings in the heart itself. The number of these drugs is very great, and very many of the arrow poisons and ordeal poisons employed by savages act on the heart in this way.

Among them may be mentioned the active principles of digitalis, strophanthus, erythrophleum, convallaria, adonis vernalis, antiar, tanghinia, hellebore black and green, oleander squill, manganja, carravol, vao and cactus, but among these the most important are certainly digitalis and strophanthus. These drugs not only slow the heart, but they increase the energy with which it contracts. The energy may be still further increased by a combination of strychnin or nux vomica with the drugs already mentioned, for while they appear to act chiefly on the muscular fiber, strychnin exerts its stimulating action on the motor

ganglia of the heart. By the combined use, then, of rest, massage, graduated exercises, baths and cardiac tonics, the heart may be bronght from a condition of extreme weakness to one of moderate strength.

And then comes in the use of another system of training which is usually associated with the name of Oertel. The essence of this consists in gradually increasing the work that the heart has to do by making the patient walk farther and farther along paths of gradually increasing steepness, so that at the end of the treatment he will be able to walk a considerable distance and up a pretty steep incline. This treatment, however, requires careful supervision, lest at any time the patient overtax his strength, and the supervision should be exercised from day to day, because the health and strength of a man may vary very considerably in two successive days, not from any change in the heart itself, but from changes in other organs, and more especially in the digestive or eliminative organs. Attention to these is most essential in diseases both of the heart and vessels, but to enter fully upon this subject would take me too far, and I must conclude this paper, which I fear is already too long, by simply mentioning the great use of cholagogues, purgatives and alteratives, such as iodid of potassium, in diseases of the heart and vessels, more especially in antheroma, which, by affecting the coronary arteries, leads to disease of the heart itself. The utility of iodid of potassium is very great, but sometimes it must be administered in large doses, and frequently I believe the full advantage is not obtained because the doses are not sufficiently large.

To resume shortly what I have said in this paper, the main risk in cardiac disease is from feebleness of the muscular wall of the heart, and the chief remedy is to lessen the work to be done till it is not excessive even for the most feeble heart; to slow the heart's action so as to give it time for rest, and to train the heart by graduated exercises until it is able to meet all the ordinary, or perhaps all the extraordinary, demands upon it.

T. LANDER BRINITON, M.D.

HAY FEVER.

TREATMENT.—A. Rixa thinks that in the prevention of hay fever about two weeks before the onset of the disease one should commence to irrigate or sterilize the nasal cavity and the post-nasal spaces with a harmless antiseptic solution, using the douche and the atomizer. Hydrozone is the most innocuous and most powerful germicide. It is a 30-volume aqueous solution of peroxide of hydrogen. At the beginning it may be used for irrigation diluted in the proportion of 1 ounce of hydrozone to 12 ounces of sterilized water. Nearing the period of the expected onset of the disease the dose is increased to 2 or 3 ounces of hydrozone to 12 ounces of sterilized water, the douche, either tepid or cold, being used four times a day,—morning, noon, evening, and at bed-time,—while, during the intervals, the atomizer, with a solution of hydrozone and pure glycerin, or sterilized water, 1 to 3, is used. In most obstinate cases when there is still some irritation in the nasal cavity the following prescription may be used also:—

℞ Acid. boric., 20 grains.
Menthol., 4 grains.
Glycothymolin., 2 drachms.
Sol. eucaine B, 4 p. cent., 2 ounces.

M. Sig.: Use in atomizer. As a rule, this treatment is sufficient to avert the disease and keep the patient comfortable.

The mucous membrane may be rendered less sensitive, or non-sensitive, to "pollen" or other irritants, and it may be given greater resisting power and made immune against the exciting causes by a method that is termed by Edward W. Wright "massage treatment." This treatment came about in the following manner:—

In reviewing the chemistry of hypoxanthin the statement was found that it was present in the "pollen of flowers and grasses." By blowing powder of hypoxanthin into the noses of patients who had had hay fever it was attempted to excite the symptoms of that condition; but it could only be said to be an irritant. Then the powder was used to render the mucous membrane accustomed to it. Knowing the good effects of tannic acid in eyelid affections, and the beneficial results of iodine in the pharynx, it was decided to use one or both of these in the nose, applying it with gentle friction over the whole mucous membrane of the nose, but more especially to the usual sensitive areas. When there was a thickened condition of mucous membrane and an hypertrophy of parts beneath, iodine, potassium iodide, and glycerin were used. When the mucous membrane was thin, sensitive, with no appearance of hypertrophy, tannic acid, carbolic acid, and glycerin were applied. These, in weak solutions, were thoroughly applied with gentle friction to all the nooks, crannies, and surfaces of the interior of the nose, but more particularly over the usual sensitive areas, that part of the septum opposite the middle turbinated, and that part of the soft palate just behind the septum. Sometimes it was

necessary to use a very weak solution of cocaine in fine spray before a thorough massage could be accomplished The object of these applications and the friction by massage is to harden the mucous membrane, giving it greater resisting power, and thus immunity against "pollen" and other excitants.

For the treatment of an attack of hay fever two new drugs promise well: orthoform and suprarenal capsule. Orthoform will allay the supersensitiveness, the hyperæsthesia, and the paroxysmal sneezing. Its effects are in duration many times longer than cocaine, and it has no toxic action. When it is wished to give the patient free breathing through the nose and lessen the serious discharge, the use of a solution of suprarenal capsule will accomplish the desired result without the disadvantages of cocaine.

B. Douglas advises treating the the attack by irrigation of the nasal passages with a saline solution at a temperature of 106° to 114° F., after previous spraying with a 1-per-cent. solution of cocaine; this to be followed by applying, for four minutes, to sensitive parts pledgets of cotton moistened with a 4-per-cent. solution of cocaine. After this, phenol-camphor or a 19-grain solution of silver nitrate may be used with advantage. After the acute symptoms subside a spray of benzoinal containing a little menthol is to be used. The extract of suprarenal gland is almost a specific in hay fever. It may be used in the form of a spray of the aqueous solution, or given internally in the form of compressed tablets. The tablets should be given at first every two hours until some prostration is noticed and then the intervals should be lengthened; but two doses daily should be taken throughout the hay-fever season. The vasomotor disturbances should be treated by daily cold sponging or spinal douches and the internal administration of small doses of quinine and digitalis.

RHEUMATISM.

ETIOLOGY.—Delcourt finds chronic, deforming, articular rheumatism uncommon during childhood. There are two stages of the affection: one, chronic arthritis with localization of the disease process to the synovial capsule and the periarticular tissues; the second results from the first, by the extension of the process to the cartilages of the bone. Heredity plays some rôle in the causation of the disease, its exciting factor being, however, rather defective nutrition. There exists a certain antagonism between scrofulous tuberculosis and this rheumatic affection: that is, they rarely occur together.

Frederick E. Batten examined 115 chronic children in order to determine what percentage subsequently developed rheumatism. Of these, 11.3 per cent. of the children without previous rheumatism developed rheumatism within 3 years. After 5 years this was increased to 20 per cent.

Robert B. Preble thinks that there is some relation between chorea and rheumatism, rheumatism being much more frequent in children suffering from chorea than in children in general. Rheumatism acts as an excitant to chorea by the selective action of toxins upon the motor cells of the cortex, functional affections being caused, but no structural changes.

TREATMENT.—H. G. Langwill suggests the following as a summary of the chief points in reference to the prophylaxis of rheumatic hyperpyrexia: 1. Cases in which the pyrexia shows a tendency to rise instead of decline under full doses of the salicyl compounds, and in which no intercurrent condition can be detected which might account for the increasing pyrexia, should be treated at once by cold applications without waiting for the onset of nervous symptoms or for other prodromata of rheumatic hyperpyrexia. 2. When delirium appears in a case which exhibits pyrexia, and no intercurrent visceral complication can be made out which might account for its presence, the immediate employment of cold is called for. 3. Should delirium appear while the temperature remains normal, a mild form of cold applications—*e.g.*, an ice-cap to the head—should be employed, and on the appearance of pyrexia more vigorous methods ought to be adapted without waiting for any extreme degree of pyrexia (*e.g.*, 105°) to be reached. 4. Cases in which the hyperpyrexia is, as it were, accidentally discovered to be present offer, of course, no field whatever for prophylaxis, but treatment by cold should be commenced at once without waiting for the appearance of nervous symptoms or attempting to reduce the temperature by means of any antipyretic drugs.

In articular rheumatism Wilms uses a simple apparatus personally designed for the continuous application of heat to joints. Flexible metal tubes are coiled several times around the joint, a thin layer of plaster of Paris being first applied to protect the skin. A constant stream of water, at 175° to 195° F., is maintained through the coil by syphon action. The water should be used as hot as it can be borne.

B. O. Kinnear remarks that in chronic articular rheumatism the regulation of the circulation of the blood throughout the body by means of cold applied over the spinal nerve-centres will, without the aid of internal medication, restore the patient to health or ameliorate his condition. The reason that cold over the spine will accomplish this result is because when properly and intelligently applied it will always dilate the arterioles and capillaries throughout the whole organism and increase the external heat of the body very perceptibly. This signifies more rapid metabolic changes, increased general nutrition, and restoration to normal function in the tissues. The ice-bags which are to be used should never be wider than four and a half inches for the adult, otherwise the body will be chilled. The length of the bag depends on the age and size of the patient. By the intelligent use of such applications it is possible rapidly to subdue inflammatory forms of skin disease, chronic forms of inflammation in the mucous membranes, such as chronic bronchitis or chronic diarrhœa, and also "irritable ulcer," as well as cold and sluggish ulcerations. Some eight thousand applications of cold over the spine have been personally made, with observation of the results. In all these forms of inflammation, as well as in chronic articular rheumatism, the spinal ice-bag is exceedingly grateful to the feelings of the patient. After a few weeks, or even a few days, he perceives a renewal of strength, particularly if he was originally strong and vigorous. In patients of naturally feeble constitution the results are longer in appearing.

One of the worst cases of chronic articular rheumatism personally ever seen was cured by the application of the spinal ice-bag alone, without the aid of drugs, after almost every known remedy had been tried. Nearly every joint in the patient's body was affected, and had been so for eighteen months previous to the treatment. The pain was constant, night and day, and he had become much emaciated.

A twenty-two-inch spinal ice-bag was applied from the fourth cervical to the third lumbar vertebra, for one hour twice a day, with immediate relief to pain, while the bag remained on. In ten days pain had ceased in all his joints, and he could rise from the sitting position at once, easily and comfortably. His progress toward recovery was steady and rapid, and he regained in a few months about forty pounds in weight. In six months' time the cure was complete, and from that day to the present (some twelve years) he has had no relapse.

The use of the spinal ice-bag is not advised in acute articular rheumatism, on account of the great shock to the system in the sudden checking of such wide-spread disorder, but, after the disease has run its course, the condition of the patient may be improved much more rapidly and the strength more speedily regained by the use of cold over the spinal nerve-centres than is possible without such treatment. In lumbago the dorso-lumbar spinal ice-bag (ten inches long, four and one-fourth inches wide) will readily break an acute attack, with almost immediate comfort to the patient. At the same time a fairly-strong cholagogue should be

administered. In chronic lumbago the ice-bag will effect a cure in many cases, and in others it will check the severity of the disease, and give much ease to the patient. In chronic articular rheumatism the spinal ice-bag may be used from one-half hour to three hours per day in divided application, according to the strength and general condition of the patient. If the appetite be good and the patient fairly strong, then the ice-bag, at first wrapped in one thickness of flannel, may be used morning, noon and night for an hour. The bowels must be kept moving steadily and naturally. In an acute attack of lumbago the whole intestinal tract should be evacuated by a cholagogic pill and a large enema, the dorso-lumbar ice-bag applied against the skin, and continuously, from the seventh or eighth dorsal to the third lumbar vertebra, until the patient is able to rise and be about with some degree of ease. The bag is then reapplied every four hours, for one-half hour at a time, until entire relief has been established. A mild tonic with some preparation of iron will then be sufficient to restore the patient to his usual health.

ACUTE RHEUMATISM.—*Treatment.*—H. B. Favill applies the following treatment to a typical case of acute rheumatism:—

1. The bowels are to be emptied thoroughly, preferably with a sharp mercurial. 2. Salicylate of soda is administered to its full analgesic effect; if it is not well borne by the stomach, give its equivalent—oil of wintergreen. If it is contra-indicated by cerebral conditions, antipyrine may be used or the coal-tar preparation best adapted. If these are contra-indicated, by condition of the heart or nervous system, opium is of value. At all events, the pain is to be controlled. 3. As the pain is controlled by such means, aided by local measures, particularly heat and immobilization, the salicylate element should be gradually removed and the system saturated with alkali, continued until the active process seems controlled. 4. Finally, while giving alkali, or after it, iron should be administered, providing the conditions of bowels and liver permit. 5. At all times, and incessantly, one should promote intestinal hygiene by mercurial, cholagogue or saline, with the conviction that, upon the processes here represented, the disease, its duration and complications largely depend. Impatience with the tediousness of the course, leading to ill-considered and pre-mature activity, must be avoided.

In articular rheumatism Bourget recommends the following ointment:—

℞ Salicylic acid, 45 grains.
Oil of turpentine, ¾ drachm.
Adeps lanæ, 5 drachms.
Lard, 5 drachms.

This is spread over the parts, and a dressing of absorbent cotton applied and covered with any impervious material.

S. Sterling employs an ointment of salicylic acid in rheumatic affections in the cases in which the salicylates cannot be borne by the stomach. The ointment personally employed is as follows:—

℞ Salicylic acid,
Oil of turpentine,
Lanolin, of each ½ ounce.
Lard, 2 ounces.

This is applied to the affected joint and thickly covered with non-absorbent cotton (wadding), which is covered with gutta percha tissue and kept in place by a flannel bandage. After the superficial epidermis is destroyed the turpentine is left out from the above formula.

Arendt recommends ichthyol applications, according to one of the following formulas, in articular rheumatism:—

1. ℞ Ichthyol, 2½ drachms.
Distilled water, 2½ drachms.
Adeps lanæ, 1 ounce.

2. ℞ Ichthyol, 2½ drachms.
Extract of belladonna, 15 grains.
Adeps lanæ, 5 drachms.

3. ℞ Ichthyol, 2½ drachms.
Diluted alcohol, 2½ drachms.
Distilled water, 1¼ ounces.

MIGRAINE.

ETIOLOGY.—Frieser maintains that migraine is rarely a disease by itself, but is a symptom accompanying some other affection. Sometimes there is an hereditary predisposition. Migraine often complicates anæmia and various diseases of the female generative organs. It may also be due to ear or nasal disease, but one of the most frequent causes lies in dyspepsia, due to chronic gastric catarrh, dilatation of the stomach, etc. Overwork in school-children is an important etiological factor.

C. A. Herter thinks the typical migraine paroxysm seems to be almost always associated with nutritive disturbances, which should be considered as part of the migraine paroxysm There are many features in a typical attack of migraine indicating gastro-intestinal disturbance. The ingestion of food often causes nausea and vomiting. Usually after a severe migraine paroxysm the urine is increased in amount on the second and third days after headache. The uric acid is increased and the extractives also. In seven different patients the contents of the stomach were examined in the paroxysm. In these cases there had been evidences of complete arrest of gastric digestion. Not only the secretory, but the motor activity of the stomach was diminished or temporarily arrested. Although it may be safely assumed that there is a toxæmia present in severe attacks of migraine, we must admit our utter ignorance of this toxæmia.

William Hirsch says that the chief objection to the toxæmia theory of migraine is the occurrence of unilateral symptoms, and the fact that one side of the body alone is affected time and again.

L. Stieglitz does not accept the view that the toxins giving rise to migraine come from the alimentary canal. The periodical cases of migraine often vomit repeatedly, and yet the attack is unrelieved. There seems to be a very close connection between epilepsy and migraine.

Joseph Colins thinks there is a very close genetic connection between migraine and epilepsy.

COMPLICATIONS.—M. Brasch notes the case of a man who, in the course of two years, had had four attacks of migraine. In the last attack there occurred excretion of tears from the left eye. Then headache in the left frontal region, then swelling of the eyelids, and suddenly, while straining at stool, a hæmorrhage into the lids, with loss of vision of the left eye. Pain disappeared as soon as the hæmorrhage had taken place. In the course of eight days almost complete recovery had ensued. The question is discussed whether the migraine of itself is sufficient to determine the effusion of blood, and an investigatian of the literature shows that, although infrequent, migraine with hæmorrhage had occurred. In a case, such as this, the prognosis is always favorable as far as the immediate attack is concerned, but the liability to relapse is considerable.

TREATMENT.—According to C. A. Herter, the first step in the treatment of a migraine seizure should be the washing out of the stomach with water at a temperature of not less than 105° F. The effect of lavage is better

where the stomach contains food, but it should be employed in any case. Where the lavage is inconvenient the patient should drink hot water. After the stomach-wash the patient should be given a rapidly-acting cathartic, one of the best being a teaspoonful or dessertspoonful of Carlsbad salts. It is desirable to avoid severe purgation. The cathartic should be aided by a hot soap-and-water enema, and this should be given though there has been a recent stool. If this active treatment is begun within the first hour of the headache, it not only markedly relieves the pain, but often cuts short the paroxysm. Phenacetin in doses of 10 grains, repeated if necessary, is generally useful, but ammonol seems to be the best drug. Black coffee, without sugar, is often very efficacious, as is, also, citrate of caffeine. Where the face is regularly much flushed, ergot sometimes acts well.

Mary Putnam Jacobi tried washing out the stomach on a very severe case of migraine, and she was able in that way to arrest an attack which was unusually severe. In this case the stomach was entirely empty at the time of washing.

In the attack of migraine Frieser thinks washing out of the stomach is of value, and, if this cannot be done, large quantities of warm water should be taken. Menthol is the best remedy. Constipation and dyspeptic symptoms must be carefully treated by diet and otherwise. Benzacetin and trephinin, given in doses of ½ grain, are useful. Valerianate of menthol may be used in the intervals.

Methylene-blue has been successfully used in headaches by Tomson. The remedy is well worth a trial in all nervous headaches, neuralgias, migraine, and similiar conditions. Merck's methylene-blue is the only one that should be used, other brands containing chloride of zinc and arsenic. This is combined with nutmeg, each 1½ grains in gelatin capsules, one capsule being given two or three times a day.

Eshner has had excellent results in migraine from the administration of the fluid extracts of gelsemium and cannabis Indica. The dose is from 3 to 5 drops of each, given three times daily, until physiological action becomes apparent.

H. Handford believes that migraine is due to vasomotor spasm; therefore treatment should be directed to the relief of this spasm, and consist in application of warmth to the extremities and the ingestion of warm drinks; antipyrine, phenacetin, and the nitrites are also often useful.

Ewer describes an apparatus which, by slight, very rapid, and equal vibrations of the body, is able to cure within two or three minutes all nervous pain, especially migraine. The apparatus is operated by electricity, and consists of a small motor whose core revolves with great rapidity. This core at one end is bent a little from its centre, so that with each revolution it strikes a rubber knob, giving to it a little thrust. If this knob is held against the surface of the body the rapid revolution of the motor transmits to it a trembling, with the relief of pain.

M. Benedikt says that the electrical treatment of migraine is the best. Sodium iodide has a favorable action.

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